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THE BUILDER

A RECORD OF ARCHITECTURE & CONSTRUCTION

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REGISTERED AT THE GENERAL POST OFFICE AS A NEWSPAPER.

PRICE FOURPENCE.
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THE ROYAL INSTITUTE of BRITISH ARCHITECTS.
BUILDING SURVEYING.—Examinations for Certificates of Competency to act as DISTRICT SURVEYOR under the London Building Act, 1904, and as BUILDING SURVEYOR under Local Acts and Authorities, will be held in London on OCTOBER 18, 19, and 20, 1916. Applications will be received until OCTOBER 4.
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[See other Advt. last page of literary matter.

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EXAMINATIONS, 1917.

PRELIMINARY EXAMINATION.

Notice is given that the Preliminary Examination for the admission of Students will be held on JANUARY 17 and 18 next.
Candidates from the counties of Lancashire, Cheshire, Yorkshire, Durham, Cumberland, Westmorland, Northumberland, Staffordshire, and North Wales will be examined at Manchester. Candidates from other counties in England and Wales will be examined in London.
Irish Candidates will be examined in Dublin.
Scottish Candidates in Glasgow.

PROFESSIONAL EXAMINATIONS.

Notice is also given that the Annual Professional Examinations for Land Agents, Valuers, Building, Quantity, and Mining Surveyors (held under the provisions of the Charter) will be held on MARCH 26 to 30 next, inclusive.
All English Candidates for the Professional Examinations are examined in London.
Irish Candidates in Dublin.
Scottish Candidates in Glasgow.
All applications for both the Preliminary and the Professional Examinations must be sent in before the end of SEPTEMBER. The necessary Entry Forms for the various Examinations, and particulars as to subjects, course of examination and prizes, can be obtained of the SECRETARY.

SPECIAL NOTICE.

Candidates for the Intermediate Examination who have not yet attained the age of 19, and who are liable to be called up under the Military Service Act, will be granted facilities as far as possible in respect of the age limit for candidature.

Analysis of Advertisements.

For Alphabetical List of Firms appearing in this List and References to current Advertisements see Opposite page.

Art Metal Fittings:—
Art Metal Construction Co. Ltd.

Asbestos Tiles and Sheets:—
Bell's United Asbestos Co. Ltd.

Asphalte:—
Claridge's Asphalte Co. Ltd.
Engert & Rolfe, Ltd.
Faldo, T. & Co. Ltd.
Hobman, A. C. W. & Co. Ltd.
Limmer Asphalte Paving Co.
Ragusa Asphalte Co. Ltd.
Seyssel & Metallic Lava Asphalte Co.
Val de Travers Asphalte Co.
Vulcanite, Ltd.

Beaver Board:—
Beaver Board Co. Ltd.

Bells, &c.:—
Carr, Chas. Ltd.

Bituminous Sheeting:—
Callender, Geo. M. & Co. Ltd.
McNeill, F. & Co. Ltd.
Vulcanite, Ltd.

Bind Cords:—
Anchor Brand.

Blinds (Window, &c.):—
Bryden, John, & Sons
Francis, S. W. & Co. Ltd.
Haskins, S. & Bros.
Williams, G. A. & Son

Boiler and Economiser Settings:—
Chimneys, Ltd.

Bricks:—
Builders' Material Association.
Burley, C. Ltd.
Dennis, Henry
Doulton & Co. Ltd.
Leeds Fireclay Co. Ltd.
Rufford & Co.
Smeed, Dean, & Co. Ltd.

Brushes:—
Builders' Material Association
Nicholls & Clarke
Young & Marten, Ltd.

Builders' Brasswork:—
Builders' Material Association
Francis, S. W. & Co. Ltd.
Haskins, S. & Bros. Ltd.
Nicholls & Clarke, Ltd.
Young & Marten, Ltd.

Builders' Ironmongery:—
Colledge & Bridgen
Nicholls & Clarke
Young & Marten, Ltd.

Building Composition:—
Callender, Geo. M. & Co. Ltd.
Calno Board
Thames Paper Co.

Building Contractors:—
Building Construction Co.

Castings:—
Haywards, Ltd.
Nicholls & Clarke, Ltd.
Thames Bank Iron Co. Ltd.
Young & Marten, Ltd.

Cement, Lime, Plaster, &c.:—
Associated Portland Cement Manufacturers (1900), Ltd.
British Portland Cement Manufacturers, Ltd.
Builders' Material Association
Burley, C. Ltd.
Greaves, Bull, & Lakin
Kaye & Co. Ltd.
Smeed, Dean, & Co. Ltd.
Wouldham Cement Co. Ltd.

Cement Waterproofer:—
Builders' Material Supply Association
Kerner-Greenwood & Co. (Pudlo).

Chimney Cowls, &c.:—
Ewart & Son, Ltd.
Nicholls & Clarke, Ltd.
Young & Marten, Ltd.

Chimney Pieces (Marble), &c.:—
Nicholls & Clarke, Ltd.
Sessions & Sons, Ltd.
Young & Marten, Ltd.

Chimney Shafts:—
Chimneys, Ltd.
Furse, W. J.

Coatestone:
Stone Preservation Co.

Composition Flooring:—
Turpin's Parquet Floor, Joinery, and Woodcarving Co.

Concrete (Reinforced):—
British Reinforced Engineering Co. Ltd.
Expanded Metal Co. Ltd.
King, J. A. & Co.

Concrete Piling:—
Simplex Concrete Piles, Ltd.

Contractors' Plant:—
Builders' Material Association
Lewis & Lewis, Ltd.
Palmer's Travelling Cradle and Scaffold Co.
Parker, F. & Co.
Stephens & Carter

Cooking Apparatus:—
Nicholls & Clarke, Ltd.
Summerscales, W. & Sons
Young & Marten, Ltd.

Damp Proof Courses:—
Callender, Geo. M. & Co. Ltd.
Doulton & Co. Ltd
Engert & Rolfe, Ltd.
Hobman, A. C. W. & Co. Ltd.
Ironite Co. Ltd. (The)
Kerner-Greenwood & Co.
McNeill, F. & Co. Ltd.
Ragusa Asphalte Co. Ltd.
Rogers, Welch, & Co. Ltd.
Seyssel and Metallic Lava Asphalte Co.
Vulcanite, Ltd.

Doors (Iron, Steel, &c.) —
Dennison, Kett, & Co. Ltd.
Gibson, A. L. & Co.
Haywards, Ltd.
Hobbs, Hart, & Co. Ltd.
Lift and Hoist Co.

Door Hangers:—
Nicholls & Clarke, Ltd.
Young & Marten, Ltd.

Door Springs and Hinges:—
Colledge & Bridgen
Nicholls & Clarke, Ltd
Young & Marten, Ltd.

Electric Lamps:—
British Thomson-Houston Co. Ltd.

Electric Light Fittings:—
Tredegars, Ltd.

Electric Lighting:—
Tredegars, Ltd.

Electric Motors:—
British Thomson-Houston Co. Ltd.
Mather & Platt, Ltd.

Electricity:—
British Thomson-Houston Co. Ltd.
Croggon & Co. Ltd.
Mather & Platt, Ltd.
Tredegars, Ltd.

Endless Cords for Fanlight Openers:—
Anchor Brand.

Engines, Mortar Mills, &c.:—
Lewis & Lewis, Ltd.

Facias, &c.:—
Francis, S. W. & Co. Ltd.
Nicholls & Clarke, Ltd.
Young & Marten, Ltd.

Felt:—
Anderson, D. & Son, Ltd.
Engert & Rolfe, Ltd.
Gibson, A. L. & Co.
McNeill, F. & Co. Ltd.

Fencing (Wood &c.):—
Darlington Fencing Co.
Rowland Bros.

Fiberlic Board:—
MacAndrews & Forbes, Ltd.

Fire Cements:—
Builders' Material Supply Association

Fire Escapes, Staircases —
Clark, Hunt, & Co. Ltd.
Davis, H. & C. & Co. Ltd.
Haywards, Ltd.
Lift and Hoist Co.

Fire Protection Equipment:—
Art Metal Construction, Ltd.
Mather & Platt, Ltd.

Fire-Resisting Glazing:—
British Luxfer Prism Synd.
Haywards, Ltd.
King, J. A. & Co.

Fireproof Flooring, &c.:—
Bell's United Asbestos Co. Ltd.
Dawnay, A. D. & Sons, Ltd.
Expanded Metal Co. Ltd.
Haywards, Ltd.
Ironite Co. Ltd.
King, J. A. & Co.
Kleine Pat. Flooring Co. Ltd.
The Siegwart Fireproof Floor Co. Ltd.

Flint Paper:—
Oakey, J. & Sons, Ltd.

Floor Hardener:—
Turpin's Parquet Floor, Joinery, and Woodcarving Co.
Trus-Con Laboratories

Flooring and Paving:—
Acme Paving and Flooring Co. (1904), Ltd.
British Doloment Co. Ltd.
Ironite Co. Ltd.
Stevens & Adams
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Wilcox, W. H. & Co. Ltd.

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Lift and Hoist Co.

Gates, Railings (Iron), &c.:—
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Haywards, Ltd.
Nicholls & Clarke, Ltd.
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Haywards, Ltd.
Jennings, C. & Co. Ltd.
King, J. A. & Co.
Newton, J. M. & Sons, Ltd.
Nicholls & Clarke
Young & Marten, Ltd.

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Oakey, J. & Sons, Ltd.

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Haywards, Ltd.
King, J. A. & Co.
Newton, J. M. & Sons, Ltd.
Nicholls & Clarke
Young & Marten, Ltd.

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Grover & Co. Ltd.
Haywards, Ltd.
Helliwell & Co. Ltd.
King, J. A. & Co.
Newton, J. M. & Sons, Ltd.
Nicholls & Clarke, Ltd.
Partridge, T. & Co.
Young & Marten, Ltd.

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Ewart & Son, Ltd.
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Haywards, Ltd.
Keith, J. & Blackman Co. Ltd.
King, J. A. & Co.
Messenger & Co.
Nicholls & Clarke Ltd.
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Thames Bank Iron Co. Ltd
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Hydraulic Power:—
London Hydraulic Power Co.

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"Motor Traction"

Insurance:—
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Norwich Union

Ironite:—
Ironite Co. Ltd

Joinery, Mouldings, &c.:—
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Jennings, C. & Co. Ltd.
Ogilvie & Co.
Orfeur, C. E. Ltd.
Sessions & Sons, Ltd.
Tucker, W. Duncan, & Sons
Turpin's Parquet Floor, Joinery, and Woodcarving Co.

Ladders:—
Builders' Material Association
Heathman & Co.
Parker & Co.
Stephens & Carter

Laundry Appliances:—
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Lead, Oil, Colours, Size, &c.:—
Builders' Material Association

Lead, Oil, &c.—(Cont.):—
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Girdler J. & Co.
Nicholls & Clarke
Young & Marten, Ltd.

Letters, &c.:—
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Lifts, Hoists, Cranes, &c.:—
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Dennison, Kett, & Co. Ltd.
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Haskins, S. & Bros. Ltd.
Lewis & Lewis, Ltd.
Lift and Hoist Co.
Stevens, A. & P.
Titan Lift Co. Ltd.
Waygood-Otis, Ltd.

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Anderson, R. & Co.
Croggon & Co. Ltd.
Furse, W. J.

Lithography:—
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Hobbs, Hart, & Co. Ltd.
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Shaw & Carter, Ltd.
Young & Marten, Ltd.

Marble:—
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Haywards, Ltd.
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Young & Marten, Ltd.

Mill Mortar:—
Builders' Material Association

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Cope & Co.
Maw & Co. Ltd.
Moore, M. & R.
Stevens & Adams
Turpin's Parquet Floor, Joinery, and Woodcarving Co.

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Nicholls & Clarke
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Mather & Platt, Ltd.
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Phœnix Engineering Co. Ltd.
Pulsometer Engineering Co.
Wilcox, W. H. & Co. Ltd.

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Young & Marten, Ltd.

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McNeill, F. & Co. Ltd.
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Roofing (Rok):—
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Roofing (Ruberoid):—
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Haywards, Ltd.
Leeds Fireclay Co. Ltd.
Nicholls & Clarke
Rufford & Co.
Sessions & Sons, Ltd.
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Bath and Portland Stone Firms, Ltd.
Stone Preservation Co.
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Interoven Stove Co. Ltd.
Nicholls & Clarke, Ltd.
Sessions, J. & Sons

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Young & Marten, Ltd.

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Builders' Material Association
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Mather & Platt, Ltd.
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Shaw, M. T. & Co.
Thames Bank Iron Co. Ltd.
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Doulton & Co. Ltd.
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Terra-Cotta Co.

Tiles:—
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Cope & Co.
Dennis, Henry
Doulton & Co. Ltd.
Leeds Fireclay Co. Ltd.
Maw & Co. Ltd.
Minton, Hollins, & Co.

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Gliksten, G. & Son, Ltd.
Jennings, C. & Co. Ltd.
Friday, Sydney (Oak)
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National Time Recorder Co.

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North British Rubber Co.

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Vulcanite, Ltd.

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Shorland, E. H. & Bro. Ltd.

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Ironite Co. Ltd.
Kerner-Greenwood & Co. (Pudlo).
Rogers, Welch, & Co. Ltd.
Tribe & Co.
Trus-Con Laboratories
Vulcanite, Ltd.

Water Towers:—
Chimneys, Ltd.

Window Frames and Sashes —
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Brunswick Engineering Co.
Carron Company
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Young & Marten, Ltd.

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Tredegars, Ltd.

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Tredegar & Co. Ltd.

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Anglo (All British) Parquet Co.
Bassant, H. & Co.
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Stevens & Adams
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THE BUILDER

A RECORD OF ARCHITECTURE AND CONSTRUCTION.

VOL. CXI.—No. 3841. SEPTEMBER 15, 1916.

CAPITAL AND LABOUR.

THE question of the relations of capital and labour after the war seems to be likely to occupy public attention hardly less prominently than the war itself does at present. We feel that we are at the beginning of a new epoch, and that the immense conflict now raging throughout Europe will prepare the way for enormous social and industrial changes. War, evil though it is, has secured for many of the toilers undreamed of prosperity, which they will not relinquish without a struggle, and which in the interests of the community should be made a permanent instead of a temporary condition, and it is to be hoped that statesmanship and knowledge will not fail to render the condition of labour a happier and better remunerated one.

The United States of America has been for more than half a century a land of promise for workers, for, while wages have been far higher than in this country, the cost of the essentials of life, with the exception of rent, has been little in excess of what it is here; food prices, in spite of the operation of rings and combines, have averaged less than in this country; while clothes and other necessities have been little dearer—a result partly due to the abundant national resources of a developing country, but also to two factors—the extended use of machinery and the fact that the "free and independent American citizen" is for the most part without fear that labour is sacrificed to capital unless its output is restricted by trades union regulations. The advantages of absolute free trade within an area almost equal to that of Europe, protected from outside competition by a tariff wall, are also factors which have caused the unprecedented prosperity of America.

It is a singular fact which should be carefully considered by our labour leaders that a country whose Government has favoured rather than discouraged the growth of what may be described as the oligarchy of capital should be one in which labour is, on the whole, better off than elsewhere; while it is rapidly approximating to a state of development in which it can no longer be considered as a "new country" waiting for the "pioneer."

The main causes of American prosperity may be summed up as being the result of the stimulation of production by every means which ingenuity and invention can devise, coupled with the willingness of all classes to use these means without stint and prejudices, and the recognition that there are few positions to which a man may not reasonably aspire if he uses his powers and intelligence well, and that classes are not divided from one another by insurmountable barriers.

A little American hopefulness could be infused with enormous advantage into the English temperament, and an examination of facts might convince labour that the stimulation of production, instead of operating against the interests of labour, would enable it to hold its own against the real or imaginary desire of capital to dominate and rule. An increase of wages paid in a given period, even if it increases the rewards of capital, renders labour more independent of it, for it means the building up of reserves which can be spent in securing better conditions of life or in the creation of a sinking fund which may enable labour to dispute with capital on better terms. Wealth must be created before we can divide it, and the greater the amount created the better position will labour be in to demand a more liberal reward for its efforts.

The leaders of labour would admit the necessity of organisation and, as reasonable men, that organisers are "worthy of their hire," and it would be a most useful object-lesson if in every industry and calling labour were to promote companies with officials at the heads of them to compete with the so-called capitalist whom they often distrust. If an amalgamated body representing the various building trades could collect a little capital and appoint the necessary directors and managers themselves they could take on contracts, securing the whole of the profits in the form of wages and interest on capital, and they would then prove whether they had been exploited for the benefit of the master builder or not. The community would be willing to deal with a building company promoted by workmen if it were financially sound and fulfilled its contracts. No one would complain if a middle-man were eliminated and his profits used to increase the earnings of the workers, who would learn from practical experience the risks of management and the work entailed in it.

If the experiment were a success it would be followed; if not, labour would understand the other side of the question, with the result that a better agreement between labour and capital would be promoted. And what is possible in the building trade is feasible in almost any other, in greater or less degree depending on the amount of capital and plant required to make a start. Capital is probably available from outside sources, as there are many whose sympathies lie in the direction of democratic institutions, and might be willing to invest capital in experiments having a reasonable chance of success. We can see no better method of settling once for all the vexed questions which antagonise labour and capital. Sir William Lever is among those who believe the industrial problem is capable of solution on co-partnership lines, and states he has been able to avoid strikes in his business; but, though we believe with him in the benefits of co-partnership, it is doubtful whether labour will ever be wholly satisfied until it finds by actual experience the value of the part played by management and capital in the production of wealth.

A good machine is one in which every part is adapted to its necessary work and in which all unnecessary complication is eliminated, and a healthy commercial community is one in which the individuals are fully employed in carrying out the work they are most fitted for and receive full pay for doing so.

Many theories which in the past have been fetishes are now in the melting-pot of a great crisis, and the workers must bear in mind that the times are abnormal, and in many cases they are being paid wages which could not be justified commercially, because national security has no price; but these conditions will not outlast the war, and it will remain for every class to prove that its services have a given value. Our position among commercial nations depends more than it ever has before on increasing production and in decreasing the cost of that production, not by lessening wages, but by the full utilisation of machinery and power which capital has to provide. Labour on its side must, if it wishes to reap the benefits of a new era, put aside obsolete theories the truth of which has been disproved, and which would have led to disaster but for our favoured position during three-fourths of last century, in which we had to face no competition.

The war has given us an opportunity of making what may be defined as a new start; it is a "tide in the affairs of man which taken at the flood leads on to fortune," but if neglected will leave us in a worse position than our neighbours.

If labour can better its position by eliminating the capitalist it can do so without hurt to the community, but this can only happen if it proves by practical demonstration that it can fill dual functions without loss of efficiency.

We trust that labour will realise that its reward does not depend on any constants that can be fixed by the State, but on a complicated set of changing conditions which it is of the utmost importance it should, in common with capital, realise and take into consideration.

NOTES.

The Sheffield University Department of Architecture.

We have before us a prospectus of the Architectural Courses of the University of Sheffield, which were founded in 1907 at the desire of the Sheffield, South Yorkshire, and District Society of Architects and Surveyors, and has been approved by the R.I.B.A., which grants exemptions from its Intermediate Examination to students who obtain the degrees, diplomas, or first-class certificates awarded by the University. The department provides first a course forming part of the ordinary degree of Bachelor of Arts; second, a course of preparation for students who wish to take the degree of Bachelor of Arts with Honours, which necessitates a three-year day course and two-years' part-time course, and a certificate course; fourth, a diploma course; and fifth, a special evening course. The lecturer of the department, Mr. W. S. Purchon, M.A., A.R.I.B.A., is a teacher of great ability and enthusiasm, and it is much to be hoped that the effect of the department's work will in time react and lead to the reconstruction on good architectural lines of one of the richest but most architecturally depressing of our cities.

The Trades Union Congress.

The Trades Union Congress, held last week at Birmingham, meeting in such unusual circumstances, presents a great opportunity to organised labour to show a statesmanlike spirit. During the war organised labour has risen "above itself" and has performed services which deserve not to be forgotten, and, although it is not yet the time to practically consider the adjustment of internal affairs after the war, the debate on this question is capable of being made of considerable interest. The resolution recommending the national control, through a Minister of State, of land, shipping, railways, waterways, mines, etc., was only to be expected having regard to the views expressed at all previous congresses. The resolution demanding the restoration of trade union customs and rules (however unpalatable it may seem in these times of unrestricted output) it must be remembered is the subject of a solemn pledge on the part of the Government. The *status quo ante* is to be restored at the conclusion of the war, and any amendments or improvements can only be considered after that pledge has been redeemed. We must trust that when the time comes for these questions to be considered it will be found that the trying period of common suffering and gallant self-sacrifice will have taught us all lasting lessons of mutual respect and forbearance, and that they may bear fruit in the peaceful adjustment of all our internal economic questions.

St. Peter le Poer.

A correspondent writes us in connection with our note on the Church of St. Peter le Poer that he has no regrets for its demolition and that its interior was "quite as fitted for a gasometer as a church." This is probably true, yet the general plan and design of the church were both interesting and unusual. More than any other form the circle and ellipse depend on suitable treatment, and all would admit that the Church of St. Peter le Poer as executed failed in this respect. Our correspondent tells us an interesting fact. The basement was filled up with shelves on which coffins were deposited, some of which may have been in position prior to the building of the church, and the condition of the catacomb, which was found to ventilate into adjoining premises, was most insanitary and an attraction to rats and other nuisances. Whatever we may think of the interior of the church the elevation was pleasing, as the engraving we reproduced showed, but it was emphatically not a case in which those concerned would have been justified in making a great commercial sacrifice for the permanent retention of a church which was neither longer required nor of outstanding æsthetic value.

Smallpox.

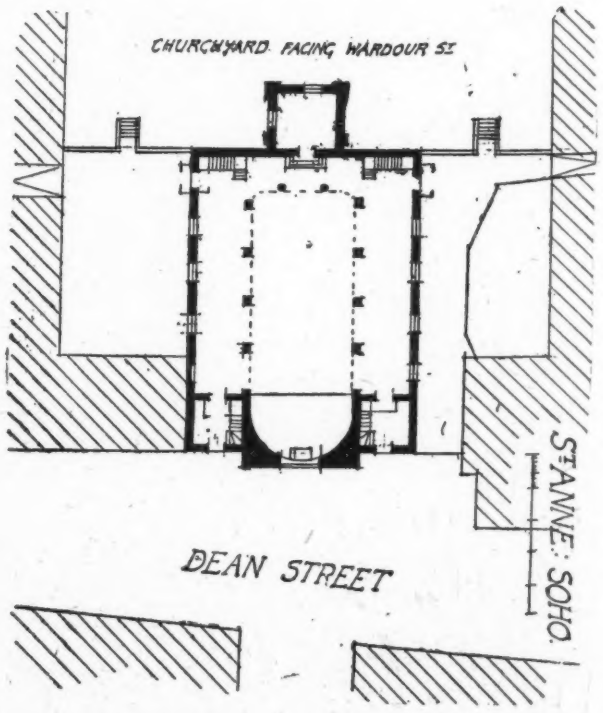
In his annual Report the medical officer of Bootle pointed out that there was a grave danger of smallpox becoming prevalent in the near future unless every possible means, including vaccination, were taken to prevent its spreading from the small outbreaks which were now occurring in different parts of the country. Within recent years the authorities have become more and more lax in permitting objectors to evade the provisions of the compulsory Act, and it seems to us with very little cause. A man can hardly be a "conscientious objector" in the matter of vaccination, but pits his very limited medical knowledge against that of experts. The children of such a man in reality should be protected from the consequences of the ignorance of their parents, especially as every case of smallpox may be the cause of a serious outbreak. We think the example of Germany, which has made re-vaccination compulsory, should be followed in this country, for the success of the measure has been so great that German doctors have been sent to England to study a disease which has practically become extinct in the Fatherland. In this country we go too far in our consideration for cranks, and of all cranks the anti-vaccinationist is one of the least reasonable. Architects want employment, but we hope will obtain it in other forms than smallpox hospitals built to cope with a pressing need!

One-Roomed Houses!

Mr. Nathan C. Merill, of Chicago, has patented a "convertible sun parlour and bedroom" in which the divisions between rooms swing on pivots. The description of this device is amusing:—"A bookcase silently vanishes and a dressing-table appears in its place; the panelling carries the sofa into the next room and deposits a brass bedstead in exchange. The room grows larger or smaller before the occupants' eyes, windows appear or disappear at will, and a blazing grate fire is transformed into a kitchen range—all by a touch of the hand." But for one small impediment the process might be carried further and the householder enter a spacious Elizabethan hall which, on pressing a spring, would change into a dining-room and subsequently into a drawing-room and bedroom, the process to be reversed on leaving. The small obstacle to which we allude is the disposal of the furniture and of the various occupants of the house. As it is, if the husband were a forgetful man he might press a button without thought and his wife and her guests in the drawing-room would revolve away to the back of nowhere or, together with the drawing-room ingle-nook, suddenly appear in the scullery or coal-cellar!

Sheffield.

"Observer," writing in the *Sheffield Telegraph*, points out what the city might do to promote local trade, and refers to the example of Nottingham, which has appointed a Development Officer whose duty it is to see that every means is taken to bring home to the public the advantages which Nottingham can offer traders. The Corporation of Nottingham, for example, owns excellent factory sites, and the Development Officer can let them free to suitable tenants for a year or more. If Sheffield, it is urged, is to get its share of the commercial development which should follow the war, it will not do to wait until other cities have got "the pick of the basket." Few people, it is contended, will want to use German cutlery after the war, and Sheffield should take steps to replace Solingen. A further letter to the Press urges that space for new factory sites round Sheffield might be erected if the sewage was more economically disposed of, and that the size of the area allocated to its treatment is excessive. We trust that many cities and towns will take energetic means to push their interests, as we cannot depend on the authorities exercising all the duties of safeguarding them. A strongly-expressed wish of organised communities which have considered their own requirements with intelligence, backed by the Parliamentary support of their members, would result in a most desirable pressure when decisions affecting the trade of the country have to be considered and acted on. The more such pressure can be exercised the better will it be for the trade of the country.



St. Anne's, Soho: Plan. (*See page* 151.)

THE LONDON CHURCHES OF WREN AND LATER ARCHITECTS OF THE RENAISSANCE.

No. LII.—St. Anne's, Soho.

THE parish of St. Anne, Soho, was separated from that of St. Martin-in-the-Fields in 1678, and the church was consecrated in 1686, but its architect is unknown. It may have been one of the churches erected under the general direction of Wren, but it has been repaired several times and remodelled in 1866. In its present form it is not a structure of much merit or interest, its most pleasing features being the fine staircases and a number of fairly good monuments. The steeple was added by S. P. Cockerell in 1806, and its unusual design is of exceptional interest if not merit. The quaint outline of its stages, especially that containing the clock, shows great originality, and, though not architecturally perfect, possesses an unusual amount of picturesqueness. The heavy iron finial is an unhappy termination to a very original composition. The screens in front of the side doors to the church are examples of a free Renaissance treatment and have both charm and individual character.

St. Anne's, Soho.

THE TRADES UNION CONGRESS.

THE most interesting portion of the presidential address delivered by Mr. H. Gosling at the Trades Union Congress was that which dealt with the problems to be considered after the conclusion of the war. That may seem a long way off at present, and if it is to be brought any nearer it is essential that our visions of peace should in no way interfere with our determination to wage war with no slackening in our efforts. Men, munitions, method, and unceasing diligence and self-sacrifice were never more needed than they are at the present time, when the tide seems turning in favour of our arms and those of our Allies, but when the slightest slackening of effort may imperil all that has been accomplished and must at any rate postpone the attainment of peace. The President gave an excellent description of some of the problems which would have to be solved when peace has been secured: "When the Government on the resumption of peace lessens its gigantic pay roll, the biggest the world has ever seen, and stops its colossal orders for every conceivable commodity; when millions of soldiers are disbanded at approximately the same time that two or three million munition workers are discharged; when something like a third of the whole wage-earning population of this country will be simultaneously losing their jobs, there is bound to be almost a flood of men and women seeking new situations."

That is undoubtedly a true representation of the position which will have to be faced, and it is interesting to see how the Trades Union Congress proposes it should be dealt with.

The principal suggestion seems to be the establishment of a Minister of Labour, and this was supported by the Congress by 2,310,000 votes to 78,000, but it was not made at all clear what were to be the functions of this Minister. From the presidential address it may be gathered that the problems to be dealt with are the prevention of unemployment and the maintenance of the "standard" rates of pay.

The President in his address said that the unions were tired of industrial war, but that they had no intention amidst the rejoicings of peace of submitting to any further attack upon their "standard of life," and the reduction of standard rates must be guarded against.

He complained that unionists had already suffered much in the war owing to the failure of wages to keep pace with prices, but he put the rise in prices of food as well over 60 per cent., whereas the Board of Trade returns for July state the average rise for working-class establishments to be 40 to 45 per cent. The net result of all changes in rates of wages during the seven months of this year was an increase of £303,000 a week; in 1915 the net result of all changes in rates of wages was an increase of £603,000 per week; and these figures do not include the increases paid to large classes such as railway servants, agricultural labourers, seamen, police, and Government employees.

It is evident that some definition must be obtained of what the President denominated the "standard of life" amongst unionists. Standard rates of pay must bear some proportion, of course, to the cost of the necessaries of life and a sliding scale exist between them. When normal food prices again prevail it would be out of the question to maintain the existing high rates paid for labour.

The President asked if it would not be possible on the conclusion of peace for employers to put their businesses on a new footing, giving labour, not a share in the profits, but a share in control, as to the conditions under which work has to be done, the hours of beginning and ending work, the conditions of remuneration, and even the manners and practices of foremen.

In all such visions of co-operation there is the one practical difficulty that those who have no interest in the profits are always apt to demand the impossible in existing commercial conditions; but peaceful co-operation is certainly an end to be desired, and to attain this it is essential that both sides should have representatives capable of bargaining and with authority to enforce the contracts entered into.

The President was emphatic in asserting the fact that the five millions who had enlisted had not taken part in the war to capture German trade, but to enforce the recognition of treaties. This is the strong position of our side in this great struggle, and it contains a lesson which the trades unions should take to heart in their internal constitution. How often have arrangements been concluded with the responsible leaders of the unions only to be treated as "scraps of paper" by the rank and file! The unions will accomplish much if they can devise a scheme by which they can exert authority over their own members so that when a bargain is concluded with the leaders there may be some assurance that their members will adhere to it; this would be the first step towards founding real schemes for permanent conciliation, and it is to be regretted that at these Congresses the delegates do not turn their attention to their internal affairs so as to render the machine more efficient to carry through the general problems which are always the subject of debate.

The present Congress has risen above its former level, and labour has established a claim in this war which should never be forgotten. The Congress, for instance, showed sound common sense in rejecting the motion for an international Congress at the time when peace negotiations are being arranged, in which our present enemies would be represented. No word was said as to the expenditure which the war was involving, and the question of the vast depletion of the world's capital was, at any rate in the first few days of the debate, not alluded to, although some of the resolutions put—as, for instance, that which advocated the increase in the amount of old age pensions and reduction of the age of recipients—would involve enormous national expenditure.

St. Anne's, Soho. (*See page* 151.)

It is far too early to consider post-war problems in detail, but it must be borne in mind that capital is the "mother of wages" and of all benefits, and that the nation's capital will require careful building up for some time after the war is ended. A revival of trade is to be expected, but there will be great competition for it, especially by neutral countries, many of which have acquired capital in the war. If we are to compete successfully much of the self-restraint and denial which the nation has shown during the war will be required to be exercised in the period of reconstruction after the war, and the lavish pre-war expenditure on internal affairs must be kept within limits or the inevitable result will be that we shall not hold our place in the world's trade and that we shall pass through a period of industrial depression.

These facts should not be lost sight of when we dream of peace, as life must still be strenuous and our best energies will still be called for. If capital and labour can celebrate the peace by devising methods which will further their common interests, and the weapons of the lock-out and strike can be sheathed, there can be little doubt that a prosperous period may follow after the war, but it will only be attained if the spirit of the nation evoked by the war remains unclouded by selfish considerations, if the patience exercised during the war is shown in industrial affairs, and, lastly, but not least, if the luxurious tendencies which the whole nation evinced before the war are kept within bounds.

BOOKS RECEIVED.

MECHANICAL DRAFTING. By Chas. B. Howe, M.E. (New York: Wiley & Sons; London: Chapman & Hall, Ltd. 7s. 6d. net.)

THE FRESCOES IN THE SISTINE CHAPEL. By E. March Phillipps. (London: John Murray. 1s. net.)

DESIGNING STEEL STRUCTURES.

To the student well versed in the theory of stresses and strains and in the details of steel construction there are many questions bearing upon economy of labour and material that will arise in the course of his experience as a designer.

In designing a steel structure it is convenient to commence at the top, and, collecting the loads and stresses from the roof and each story, proceed downward to the foundations. With a structure of considerable height, however, it becomes necessary to arrive approximately at the weight of the superstructure in order that the grillages may be designed first.

Preliminary Plans.

Plans in outline should be made and the loads and stresses marked upon them. Assuming that we follow the rules under Part IV. of the London County Council (General Powers) Act, 1909, the following figures may serve for reference:—Reinforced concrete flat roofs 4 in. thick supported by rolled-steel joists at 8 ft. centres weigh 106 lb. per square foot, including allowance for wind-pressure, to which add 3 per cent. for weight of joists.

The ordinary steel roof truss at one-fifth pitch weighs, for a 60-ft. span, just 1 ton; and similar trusses for smaller spans may be taken at 6 lb. per square foot of elevation. For mansard roofs enclosing rooms the trusses may be taken at 5 per cent. of the weight of roofing and wind-pressure combined, not including the weight of floors.

Walls weigh about 1 cwt. per cubic foot. In the upper two-thirds of the building 30 lb. per square foot of elevation must be allowed for wind-pressure, as specified in the Act, and it is safe to consider this as taking effect vertically. The depth of a girder supporting a wall may be provisionally fixed at one-fifteenth of the span; and this depth added to the height of the wall will afford a sufficient allowance for the weight of the girder.

Reinforced concrete floors should be not less than 5 in. thick, since this is requisite for a "fire-resisting floor" within the meaning of the London Building Acts (Amendment) Act, 1905; and such a floor weighs 62½ lb. per square foot. To this should be added a superload of 70 lb. for dwellings, 100 lb. for offices, or 112 lb. for shops or workshops; and 3½ per cent. may be allowed for rolled-steel floor beams at 8-ft. centres. For warehouses, increasing the thickness of the floor is the most economical means of increasing its strength. A 7-in. reinforced floor to carry 3 cwt. per square foot will weigh 423½ lb. to the square foot, including its superload; and to this may be added 2½ per cent. for rolled-steel beams at 6-ft. centres.

The weight of a stanchion will seldom exceed ·5 per cent. of its load—a matter which may be neglected.

With a lofty building of small area it is advisable to consider the effect of wind-pressure upon the walls, causing a bending moment upon the foundations. When this is neglected the deductions allowed under sect. 22 (19) of the 1909 Act should not be made. Of course, such a bending moment as is named will have a far more serious effect upon the structure than upon its foundation, and the need of diagonal bracing, especially in the lowest story, will be evident.

Grillages.

Unnecessary grillages are often to be seen in present-day works. The rule in sect. 22 (25) of the 1909 Act, limiting the pressure on concrete foundations to 12 tons per square foot, is somewhat unfortunate, having regard to the quality of concrete generally used in London. It may be said that a thick bed of five-to-one cement concrete, three months old, will safely stand 40 tons, or even more, per square foot of the loaded portion of its surface. By the use of grillages, however, we can save excavation, which means saving time.

Here is a simple rule for finding the sizes of rolled-steel joists in the bottom tier of a grillage. With joists at 15-in. centres, the working stress being 7½ tons per sectional square inch, let l=the length of the cantilevered portion in feet, R=the reaction of pressure on the earth in tons per square foot, and s=the sectional modulus of the joists required, in square inches, as usually to be found in reference tables. Then $Rl^2=s$. The adept in engineering calculations may modify this rule as circumstances require.

The maximum pressure occurs, of course, upon the topmost tier of joists in a grillage, and it is worth while to ascertain whether there is possibility of crippling occurring in the webs. With joists of standard sections, spaced at 9-in. centres, there is no danger of crippling while the pressure of the base-plate of the stanchion does not exceed 36 tons per square foot. We must avoid using joists with weak webs, such as 12 in. by 5 in., for example. When the pressure is such as to cause anxiety about the resistance of the webs a closer spacing of joists will be more economical than resorting to stiffeners.

Stanchions.

Referring to the list of stresses upon "Mild Steel Pillars" in sect. 22 (21) of the Act of 1909, it may be observed that a stanchion stayed at cap and base by cross-girders can scarcely be deemed to have "both ends fixed," and a safe compromise is usually found by regarding it as if one end were "hinged" and the other "fixed."

In the absence of tables for reference, the value of the least radius of gyration may have to be calculated—a tedious process, especially when time is short. For any stanchion of H section the required value is slightly more than one-fifth of the lesser diameter; and to call it one-fifth is to adopt a safe approximation. For a solid cylindrical column it is exactly one-fourth of the diameter.

To find the effect of an eccentric load, multiply the load by its distance in inches from the axis and divide by the section modulus of the stanchion. The quotient is the equivalent load axially applied.

The junction between the top of one stanchion and the base of another is usually made where floor-girders occur, but the work of erection is

much more rapidly done when the junction is made 2 ft. or 3 ft. above a floor. In case the ends of the stanchions should not butt evenly against cap or base plates, the number of rivets in gusset-plates, etc., must be sufficient to offer a combined shearing resistance equal to the stress caused by the load; and this applies also to splice-plates. The positions of holes for bolts or rivets in cap and base plates should be carefully checked, and, in the event of holes being misplaced, it is better to reject the plate than allow the holes to be rimered.

Where a girder takes its bearing upon an angle-bracket riveted to a stanchion it is advisable always to fix a T-stiffener under the bracket. This is not always done when the load is slight; but the difficulty of ensuring that the end of the girder shall bear directly over the vertical flange of the angle introduces the risk of a bending strain upon its horizontal flange. Great care should be taken to check the levels of angle-brackets when riveted to any kind of box-stanchion before the stanchion is finally built up, as errors cannot be rectified afterwards.

Girders.

When the depth of a girder is equal to one-fifteenth of the span, with a working stress of 7½ tons to the square inch of flange area, the required flange area is equal to one-fourth of the evenly-distributed load in tons.

The centering of rivets in rolled sections will be arranged according to the thickness and curvature of flanges, and may be studied upon full-size details in some cases. In flanges of joists 4 in. wide, for instance, the rivets may usually be at 2¼-in. centres, but in the case of joists 7 in. by 4 in. a more convenient dimension is 2½ in.

Diameters of rivets, in relation to thickness of flange-plates, are sometimes to be determined by other considerations than questions of shearing and bearing. In the case of a bridge-girder, with an unusual thickness of flange, several rivets were found to be loose, owing to their having been chilled rapidly by the mass of cold metal in which they were inserted. A proportionately larger diameter of rivet than is ordinarily used might have obviated the difficulty.

Roofs.

According to the rules in Part IV. of the London County Council (General Powers) Act, 1909, wind-pressure is assumed to take effect upon both sides of a roof simultaneously; but the stresses in roof members consequent upon the wind blowing from one direction only should be considered. The use of angle-bars as tension members is sometimes advisable, as providing against alternations of stress, bringing tension bars temporarily into compression. Compression members liable to occasional tensile stress will, of course, have their rivets arranged and allowed for, as for tension bars. Roofs of open sheds will be heavily built to resist the lifting-power of the wind. Struts will be regarded as having both ends "hinged."

Various devices, such as rollers, etc., have been tried to allow for the expansion and contraction of roof-trusses under changes of temperature. But these devices, usually unsatisfactory in operation, are unnecessary, there being a sufficient amount of "give" in all steel structures to compensate for the contingencies named. CONSTRUCTOR.

DESIGNS IN GLASS.

MR. REGINALD HALLWARD gave a singularly interesting lecture on "Mediæval and Modern Stained Glass" to the Winchester and Hampshire Scientific and Literary Society in the Guildhall at Winchester some time ago. Speaking not merely as an authority but an expert, Mr. Hallward's words carry conviction, and those who are engaged in the art will do well to take his advice and make themselves not designers merely but craftsmen. We select the following passages:—"All my experience and all my study tend to confirm in me the conviction that the too persistent dwelling on technical efficiency alone has as its result the leaving too much out of account the purpose for which it was all intended. Finish is not to be sought for itself except in and so far as it can further express thought. This is what gives the freshness and adventure to the work of a master. And the alternative, the finicky smoothness of finish upon the top of nothing, is the sign of an unenlightened approach." Dwelling on the fragments of old glass now placed in the west window of Winchester Cathedral, the lecturer told the story of a late Dean who said he would never take part in a scheme for the restoration of that window unless £25,000 or £30,000 were collected for the purpose; he said: "We no longer think that art or happiness can be bought in this way or that, even though this quite unnecessary sum were secured and the perilous advice of scrutinising and advisory committees, aided by regiments of experts, were to our hand; these things in themselves are enough to secure it. What is it we want from a window? We want from art the sustenance from life. We want it to draw our thoughts to the only true interpretation of the world. How shall we inspire others to the beauty of things if we have not been so inspired? It is not doing something great, but finding out how to do something right that is needed. The artist must have style, but let us not think that this consists in the imitation of past styles. The work of the copyist, of the imitator can never compensate for the loss of the creator, of the artist interpreting beauty through his vision. We must not cling to old interpretation and outworn vision, or we fall into the hands of the professional person and look for figs from thistles. The Gothic spirit was indeed nobly inspired, but the imitation of Gothic reveals no inspiration and is no alternative for the immeasurable loss of it. Yet I think we suffer a loss in the want of contact between the subject-matter and direct human interest. New instances of faith, devotion, courage, and example, unfolding our present life, would, it appears to me, strengthen the hold on people and draw them towards the church, in which they may see their own lives and aspirations set forth. I can see no reason for denying ourselves the use of every resource for enriching the glass, and the addition of form and light and shade through painting is the most precious of all. The artist must paint the glass himself if he would impart his full flavour. The greatest encouragement that the art of stained glass could receive at the present time would be to cease to produce so many windows. To free the artist, to bring him nearer to his own inspiration, so that he can act more directly on its impulse, this is what furthers art and would unite us to the past again. So in regard to the cutting of glass I would say to any artist, Spend plenty of time at your bench and personally work at the glass-cutting if you would keep in close touch with the work. It is only as we handle and compare glasses ourselves, setting one against the other in the intimate way that is possible, only when the glasses lie near at hand, that they will yield up their subtler combinations. The finest effects of colour are not obtained by the quantity of light colours so much as by the right disposition of colours. The brilliant glasses may become a great snare; we do not want a window all the time at 'concert pitch.' Borders are an important consideration in the design. A sharp white narrow border makes an ugly white line, as though the window were detached from the stonework; the intention of a border is to lead gently on to the main portions, and so help to unite the glass to the stonework. In much modern work the relation to the architecture is missed, and therefore the glass obtrudes, being out of the field of vision." The lecturer pointed his moral by the story of the glazing of the great east window of York Minster, the contract for which is dated August 14, 1405, and stipulates for the completion of the work in three years from that time, the glazier, John Thornton, of Coventry, to receive the sum of £10 in silver, over and above the price, if he performed the work to the satisfaction of his employers. The Chapter, recognising the vital danger lying in delegation, stipulated that the glazier was to perform the painting with his own hand. Mr. Hallward urged that we should do well to follow his example. "Remember the east window of York Minster! The artist must be the master of his material, and himself the principal doer of his work. He must offer up his best, since nothing less than this can give loftiness to his art or sincerity and insight to his interpretation, so difficult is it to reach to art, so great are its demands." In reply to questions asked after the lecture, Mr. Hallward expressed the view that it was a mistake to mingle old work and new in the same window, and set forth his belief that the modern divorce between religious and domestic art was a passing phase which might disappear with the new spirit engendered by the war.

CORRESPONDENCE.

Australian Commonwealth Parliament Building Competition.

SIR,—Your attention has probably been called to the fact that when it was announced that the Commonwealth Government intended to proceed at once with the competition for the Australian Parliament Building the Royal Victorian Institute of Architects cabled to the R.I.B.A. to inform us that they were opposed to the holding of the competition till after the war, and to request us, in conjunction with the French architectural societies, to express our opinion on the subject to the Commonwealth Government. The Competitions Committee of the R.I.B.A. at once took action. The French architectural societies expressed their agreement with the views of the Victorian Institute, and on September 5 Mr. Fisher, the High Commissioner for Australia, gave a very courteous and sympathetic hearing to a deputation from the R.I.B.A. consisting of Mr. H. V. Lanchester, Chairman, and Mr. Herbert A. Welch, Secretary of the Competitions Committee.

Mr. Fisher promptly sent a cablegram to the Commonwealth Government expressing the views of the R.I.B.A. and of the French architectural societies, and it is hoped that at an early date we shall hear that our action has produced the desired result.

IAN MACALISTER,
Secretary, R.I.B.A.

An International System of Weights and Measures.

SIR,—This is the last of a series of letters I have submitted to you. Perhaps it does not matter much how or whence the world's weights and measures come into being; but established facts are stubborn things. I will endeavour to marshal some of them in order and draw my conclusions for the benefit of your readers.

Facts.

An international metre would be an international boon. At the same time, "the masses" (90 per cent. of humanity) find a purely decimal system irksome and inconvenient.

No possible confusion could arise in a mixed system if the nomenclature for each scale differed, if each name of a unit stood for one definite value, and if all series of units had a common origin.

The British weights and measures separate themselves, in series, into three scales, and the mixture in the past of these scales produced the "distracting jumble" complained of by metric advocates. The common origin of the three scales is Gunter's chain (20 Belgic yds.).

The British therefore possess a metre of 5 links, the corresponding metric unit of weight being the ton. This metre is only about ¼ in. longer than the French metre, which is admittedly too short, whether reckoned in the Paris meridian or the equator.

It is possible now, without legislation, to work in this 5-link metre and 2,240-lb. ton, since every constant and formula used in the metric system can equally be used in the B.D.S. without appreciable error. The results can be stated, equally correctly, in French or B.D.S. units, or converted with little trouble into common British units.

Everything possible which can be said in favour of the French system is equally applicable to the B.D.S.

The subdivision of the metre into decimals, and also into 39·6 in., each divided as required, either fractionally or decimally, is of vast

importance to trade, manufacture, and research. It must not be forgotten that we trade and manufacture more than the French. With a 39·6-in. rule, divided decimally on one face, and into 39·6 in. and tenths on the other face, we can obtain definite results for division of the metre by every numeral except seven, from two to twelve.

Similarly, the subdivision of the ton into 2,240 and 1,000 parts is of great trade value and importance.

The *Système Usuel* has been discredited, both in England in the fifteenth century and in France in 1837.

The Tripod also offers a duodecimal scale, as complete and wonderful as the metric scale, for the use of those who prefer twelve to ten in calculation.

The metric system has been adopted by the Hun as a trade weapon, and defiled by base uses, in preparing for an aggressive and bestial war on humanity. The metric system is itself the outcome of revolution, and it heralded an aggressive war on humanity.

It is very doubtful if any of the British weights and measures, not excepting those apparently novel, are of British origin. The British metre is certainly not, although it has undoubtedly existed in Britain since the dawn of civilisation here. Though British in name, the B.D.S. is undeniably international, being the product of the first world civilisation, Egypt, in its earliest manifestation of even-handed justice between man and man. The B.D.S. is also a recent "discovery," and has been in abeyance so many centuries that it is thoroughly cleansed from any bloody stains.

There is only one real issue in weights and measures to-day. Should the metre be 39·37 in. or 39·6 in., and should any international system be purely decimal or mixed?

Conclusions.

A triple scale seems to offer greater advantages than a purely decimal scale, even when halves and quarters of units are permitted in the latter.

It would be easier to change over from the metric system to the B.D.S. than *vice versâ*. This change to metric countries would be merely a slight lengthening of the metre and a corresponding addition to its derivatives. With us a change over to the metric system would amount to cataclysm, affecting every class of society.

Foreign opposition to the B.D.S. must be based on other grounds than nationality, the British metre being simply the ancient Belgic yard, once common all over civilised Europe.

The Allied acceptance of the B.D.S. would be one fitting punishment for the Hun, who must either make an historical change over to the ancient Belgic yard of his victim or remain in unenvied isolation.

There is no need to wait till we have obtained an accurate Polar measurement, since the old Belgic yard of 39·6 in. is good enough for all humanity.

The opportunity for correcting the errors in the Tripod, in consultation with the French, would undoubtedly be taken. With their experience and knowledge of the metric system French assistance in perfecting the Tripod would be invaluable.

We already possess decimal coinage down to the florin, and below this duodecimal to the penny, and fractional below again. The arrangement is, of course, a compromise between conflicting opinions, but it seems to suit most British people. If decimal demands are to be met, and duodecimal as well, together with the claims of ordinary folk, I am afraid British money will become the laughing stock of the universe. The only way would be to start the currency tripod from a coin so minute as to be useless; or else work down from a coin so high in value as to be never seen except in museums and banks. I confess I am unable at the moment to devise such a system, and think we have too many coins already in the half-sovereign, the threepenny piece, and the florin, which last should merely be a coin of account. What is wanted badly is an international gold coin, and it might be issued to the Allied countries by unhappy martyred Belgium after the war.

E. A. W. P. ILLIPS, M.Inst.C.E.

The British Decimal System.

SIR,—As interesting to British engineering and commercial interests, would it not be well to remind your readers from time to time that the United States of America avoirdupois measure of one ton, when quoted simply as a ton and not specifically as "a ton of 2,240 lb.," is a ton of 2,000 lb. only?

Also that the United States gallon is a wine measure gallon, having a cubic capacity of 231 in. only against the British cubic capacity of 277·463 in. per gallon.

In commercial affairs, when quotations are received *abroad* from a British and an American house, each quoting "per ton," or giving, say, the capacity of a pump at so many gallons, the foreigner is unconsciously (so far as he is concerned) often deceived into placing his order with the United States on account of the apparently cheaper tonnage price or the apparently greater pumping capacity.

From wide personal knowledge obtained whilst touring foreign countries the writer knows that this point deserves more consideration than it generally receives in Great Britain. Therefore if you are in agreement as to the desirability of bringing these points to prominent notice occasionally, perhaps the publication of this letter will serve that purpose at present. C. T. EVENNETTE.

London.

SIR,—Permit me as Lecturer for the Decimal Association to reply to the letter from Mr. E. A. W. Phillips in your issue of August 25. It is rather difficult to follow his reasoning, but he appears to dislike the idea of any change, yet he advocates the recognition of "a concealed meter of 5 links or 39·6 in.," which presumably he can decimalise into feet and inches, otherwise why does he give it as a basis of "a sound decimal system already possessed by us which can be used successfully in trade with metric countries"? Does he really mean that a meter of 39·6 in. can be used in conjunction with the established meter of 39·37 in.? He seems to have a scheme of his own manufacture, but he is not happy in the presentation of it—*e.g.*, the table of comparison of his B.D.S. units and the French units is interesting, but most destructive to his nebulous contentions, because of the confusing nearness of the equality of values.

Does Mr. Phillips imagine that the adoption of the metric system is advocated merely to give the country an unnecessary change? Here are a few extracts from the American Report on the Metric System in Export Trade, issued January 6, 1916, by the United States Senate:—

"'Exporters most earnestly favour the increased use of the metric system in the development and holding of foreign trade.

With the growing use of the metric system at home and abroad, it is clear that not only is the policy of extending its use in manufacture warranted, but it is essential.

Exporters will agree that the more complete the use of the metric system the easier it is to obtain foreign orders. From this point of view no argument is necessary.

Any manufacturer who, through ignorance, fear of confusion, or lack of enterprise, is unwilling to attempt to meet the requirements of foreign trade should confine his attention to our domestic trade.

Industrial changes, which in many cases mean discarding and scrapping expensive manufacturing equipment, are being made in almost every line, and it is considered profitable to do so. No less in the scale and tool trades will a movement towards the international system of measures awaken the spirit of enterprise, and instead of confusion it will probably result in a new era in those industries."

In face of these statements, fancy Mr. Phillips saying that "we do not need to adopt the metric system"!

To return to his letter and that part of it which relates to decimal coinage, I take exception to his statement that "it is obvious that recourse must be had to the 5-cent coin" instead of the new penny, which will be a 4-cent. piece, whereby "the general public might lose to the extent of millions of pounds sterling annually in this way." There is not the slightest reason to anticipate that the penny will be displaced by the 5 cent. Taking the present penny as value 100, the 4 cent becomes 96 and the 5 cent becomes 120. It is clear that less change is made by the 4 cent than by the 5 cent; then why choose the higher valued coin? "We must choose practically between Tweedledum and Tweedledee," and I plump for the Tweedledum.

One more extract from the letter, with an amazing suggestion. It is this: "The Germans have destroyed the manufactures of France, Belgium, and Russian Poland, razing the buildings and removing or wrecking the machinery. Since they adopted the metric system as a trade weapon, why should not the Allies defeat them with British units, branding enemy goods, or compelling enemy countries to make great and humiliating changes themselves?" We must remember that six of our Allies—Belgium, France, Italy, Portugal, Rumania, and Servia—have the metric system obligatory. Does Mr. Phillips mean that these gallant nations should adopt British units and thus themselves be compelled to make great and humiliating changes in order to be able to inflict the like on Germany, or what does he mean?

No, Sir, we cannot contemplate anything of that nature, but we will do all in our power to recover the lost opportunities of trade taken from us by a clever enemy which has always proved herself a redoubtable antagonist in trade as well as in war; just as we have matched her guns so must we match her trade thoroughness, her extended system of trade representatives, her knowledge of foreign languages, and more particularly her willingness to discard an anomalous lot of weights and measures in favour of the metric system.

J. LINGHAM LEES.

"Manx Antiquities."

SIR,—Some few years ago I delivered lectures on the above subject before the Liverpool Architectural Society and the Liverpool Manx Society, and it occurred to me that antiquarian visitors there (Ellan Vannin) might find a reference to them useful in the gist of same given below:—

"Mr. McGovern, at the outset, said he intended to deal with, first, stone circles and sepulchral mounds; second, cabbals, keeills, treens, and mortuary primitive churches; and third, Runic remains. The lecturer, referring to the Cregneese circle, near Rushen, said these archaic remains have now been conclusively proved to come under the character of mausoleums, and not as so long supposed Druidical temples. The Cromleac also has been ascertained not to be a Druid's altar erected for the purpose of human sacrifice; its sepulchral character had been vindicated within the last few years by the use of the spade. In connection with sepulchral mounds in Ellan Vannin, he recommended its antiquaries to compare the examples on their island with those recently discovered at Toam, Blacklion, Co. Cavan, and those near Bray, Dublin. Anent cabbals, keeills, treens, and mortuary primitive churches, Mr. McGovern traced their gradual transition, the origin of which he attributed to Ireland. An exact description of a cabbal is given in the "Book of Armagh," and is the outcome of the Hiberne-Celtic occupation of Eubonia before the Scandinavian rule. In dealing with the third section—Runic remains—the lecturer spoke of the Runic crosses in Kirk Braddon churchyard, and pointed out the difference between the pure Irish ornament and the Scandinavian. The former is essentially geometric and the other zoomorphic. Irish ornament was to be seen in the splendid codices of the Book of Kell's, St. Cuthbert's Gospels, or St. Chad's, all of which date about the eighth century. For those who cannot inspect these valuable tomes they should see without delay Gilbert's "Facsimiles of Irish Manuscripts," to be had in all our chief libraries."

F. H. McGOVERN,
Licentiate R.I.B.A.

Liverpool.

GENERAL NEWS.

Quebec Bridge Disaster.

The hoisting into position of the central span of the Quebec Bridge across the St. Lawrence, 640 ft. in length and weighing over 10,000,000 lb., was begun on the 11th inst., but it collapsed only an hour after it had been announced to be safe. It is feared that the loss of life has been heavy.

When the World will be Mapped.

Addressing the Geography Section of the British Association at Newcastle-on-Tyne, Mr. Edward A. Reeves spoke of the mapping of the earth. Comparing the condition of the world's surveys in 1860 with that now existing he estimated that, with the same rate of progress as that of the last sixty years or so, it would take over 400 years more to complete the accurate trigonometrical surveying and topographical mapping of the earth's land surface: but since the rate at which such surveys were carried out had been greatly accelerated during recent years it would possibly not be half that time before all the parts of the earth's surface that were likely to be of any use to man for settlement, or capable of his development, were properly surveyed and mapped.—*Times.*

Engineering and Labour.

In the course of his address to the Engineering Section of the British Association recently held at Newcastle-on-Tyne Mr. Gerald Stoney said that there was much to be done on the commercial side of engineering. The employer did not look after the welfare of his workmen as he might. In many works the provisions for getting food and drink warmed were most primitive and inefficient. In pointing out some of the difficulties of adjusting the wages to be paid to the workmen Mr. Stoney expressed the opinion that the cutting of piece prices by the masters in the past was largely responsible for limitation of output. He had very reluctantly come to the conclusion that the workman of to-day was not doing so much work as was done thirty years ago, and that time-keeping was not so good. Unless, he said, something could be done to bring master and man together and make both work for the common good England's supremacy in the engineering of the world would come to an end. What was wanted was common honesty and common sense on both sides.

Housing Conference.

There was a large gathering of delegates to the Trades Union Congress at a National Housing Conference held in the Priory Rooms, Birmingham, recently, called by the Workmen's National Housing Council to consider the housing of the working classes. Mr. Fred Bramley (Furnishing Trades Association) moved a resolution: "That as it is impossible for local authorities to frame housing schemes that fulfil modern requirements, especially accommodation, that can be let at a rental within the means of wage-earners, this Conference calls upon the Government to assist local authorities by contributing money from the National Exchequer equal to not less than 20 per cent. of the sum sanctioned by the Local Government Board for the provision of housing schemes, and urges that not less than twenty millions should be set aside for housing purposes; and further demands that, in view of the reluctance of the local authorities to prepare housing schemes, the Local Government Board shall issue a special order making it compulsory on local authorities to exercise their powers under the Housing Act, so that schemes can be proceeded with immediately after the termination of the war." He said that the evil effects of bad housing conditions could not be localised, and it should not be left to speculative builders to protect their own interests on local town councils.—The resolution was carried unanimously, and also the following resolution: "That this Conference, representative of all sections of the working class, emphatically protests against the suggestion that public money should be used to assist limited liability companies and private owners to build houses that will be let at rentals based on laws of supply and demand."

The "Englishwoman" Exhibition of Arts and Handicrafts.

The *Englishwoman* will hold its sixth annual exhibition of arts and handicrafts at the Central Hall, Westminster, from November 15 to November 25. The object of these exhibitions is threefold. They encourage British arts and home industries, raise and maintain a high standard of workmanship, and provide a market for the work produced. As usual, several village industries will exhibit. The address of the Secretary is No. 11, Haymarket, S.W.

British Trade in Latin America.

The Trade and Industry Committee of the Royal Colonial Institute have received a statement as to the possible extension of British trade in Latin America, from which we take the following extract:—"To increase British trade you need initiative. It would be worth while for some of our Manchester, Birmingham, and London exporting firms, or associations which might be formed, to open up branches in the principal towns of Latin America. I should also suggest that the Board of Trade, Chambers of Commerce, and public-spirited men take the matter up, so that by propaganda the young fellows at home should become interested, and whilst they would do a splendid stroke for themselves, like the young Germans do, they would also do something for their country."

Imperial Theatre, Tokyo.

The *Times* (Japanese Section) of September 2 gives a description, with a view, of the Imperial Theatre, Tokyo, which was built in 1910–1, after the designs and plans of Mr. Tamisuke Yokogawa (architect also of Kogaku-hakushi), many suggestions for the designs and interior decorations being made by the late Sir Claude Macdonald when British Ambassador to Japan. The theatre was erected at a cost of £120,000 for the fabric and equipment. It has a steel frame, put together after the American manner, and independently from the walls; the proscenium gives an opening 49 ft. wide by 24 ft. high; the stage has a floor 48 ft. in diameter, which is revolved by electrical power; the auditorium (containing 1,700 places) has four stories, the lower two being in tiers and fitted with tip-up seats, after the European mode; the ceiling and walls are covered with oil paintings, and ventilation is provided by means of a motor-fan in the roof; there are six smoking-rooms and three large dining-saloons and retiring-rooms for the Imperial boxes.

Deceased Builder's Estate.

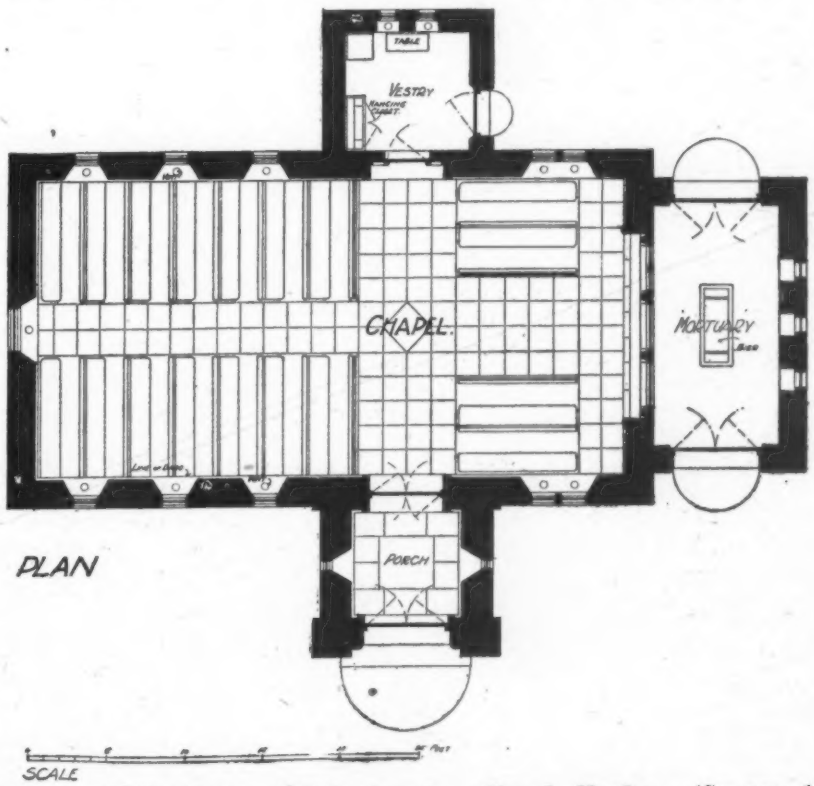
Mr. John Coleman, of Chaxhill, Westbury-on-Severn, builder, who died intestate on March 6 last, has left estate of the gross value of £13,681 11s. 2d., with net personalty £9,995 18s. 4d.

Building in Germany.

Some interesting official figures have recently been published as to the condition of the building trade during 1915. This industry in Germany has been passing through a severe crisis for some time past, and the war has proved the final blow. In the cities making returns, comprising the most important in Prussia excluding Berlin, the number of new dwellings erected in 1915 was less than half the number in 1914 and about one-fifth that of 1912. In spite of this reduction in building the number of empty houses has risen considerably, and stood at the end of 1915 at a higher level than for years past. In Hamburg and Altona it is interesting to note the proportion of empty houses was, with 6·8 per cent. and 6·3 per cent. respectively, higher than for any other city in North Germany. After these come Düsseldorf and Barmen, Charlottenburg, and Berlin-Schoneberg, with over 5 per cent.—*Economist.*

The Decimal System Advocated.

In the course of the recent Newcastle-on-Tyne meeting of the British Association Dr. G. B. Hunter, in the section of Economic Science, opened a discussion on the decimal system in currency, weights, and measures. Dealing with the subject from the point of view of commercial competition, particularly in the period following the war, he urged that to obtain openings for British goods we must use the metric system. If the reform were adopted he estimated that a year of the school period which was now wasted in this country in teaching our arithmetic would be saved, and there would also be a great saving in bookkeeping and clerical work. In shipbuilding they had adopted the decimal system for all their calculations, and without it they could not have succeeded. In regard to coinage, the line of least resistance would be to retain the sovereign and the florin.—Mr. Gerald Stoney, F.R.S., chairman of the Engineering Section, concurred.—Summarising what he termed to be the view of the section, the Chairman, Professor A. W. Kirkaldy, suggested that the Anglo-Saxon world should come together and try to effect the reform at once.



Whitley and Monkseaton U.D.C. Cemetery Chapel, Hartley. (*See page* 156.)

Mr. Edward Cratney, F.R.I.B.A., Architect.

House, Buckingham-Street, Westminster, S.W.
Mr. L. Stanley Crosbie, F.R.I.B.A., Architect.

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ILLUSTRATIONS.

Indian Architectural Students' Work.

THESE illustrations of Indian students' work are given in connection with the article which appears on page 157.

House, Buckingham-Street, Westminster.

THIS house is an admirable example of design based on tradition, and both in plan and general treatment is marked by a sense of scale. The porch is a very pleasing feature, and the more effective because of the general simplicity of the elevational treatment.

Whitley and Monkseaton U.D.C. Cemetery Chapel.

WE give views of this interesting and original chapel, which has been executed from designs by Mr. Edward Cratney, whose work has a deservedly high reputation because it is marked by great care and refinement of detail combined with an unusually high standard of planning.

OBITUARY.

Mr. G. Coffey, R.I.A.

The death, on August 29, is announced of Mr. George Coffey, aged fifty-nine years, the eminent Irish archæologist and Keeper of the Irish Antiquities, Dublin National Museum, 1896-1914. Mr. Coffey's researches into the remains of prehistorical Ireland formed the basis of his books—"New Grange and other Incised Tumuli in Ireland" (1892-1912), and "The Bronze Age in Ireland" and "Guide to the Celtic Antiquities of the Christian Period" (1913). He was the author of many papers upon art and archæology printed in the *Transactions* of the Royal Irish Academy. Mr. Coffey was a son of the late James Coffey, county court judge, a graduate of Trinity College, Dublin, and a member of the Irish Bar.

Second-Lieutenant W. A. Stanhope Forbes.

Second-Lieutenant William Alexander Stanhope Forbes, Duke of Cornwall's Light Infantry, who was killed on September 4, aged twenty-three years, was the only son of Mr. Stanhope Forbes, R.A., of Newlyn. He was educated at Bedale's College, Petersfield, and in 1914 won the Travelling Studentship, Architectural Association. Having been commissioned to the Military Forwarding Establishment, he, twelve months ago, was transferred at his own request to the Duke of Cornwall's Light Infantry. He had seen active service in the first line but three weeks before he fell.

Second-Lieutenant S. F. Humphrys, R.F.

Second-Lieutenant Stewart Francis Humphrys, Royal Fusiliers, who was killed on August 26, aged twenty-four years, was a son of Mr. W. B. Humphrys, of No. 55, Chancery-lane, W.C., surveyor, and was educated at Surrey College, Streatham Hill. He then entered the offices of Messrs. G. Trollope & Sons, where he qualified as a surveyor. In the autumn of 1914, being then a sergeant, King Edward's Horse, he went with his regiment to France, and a few months ago received a commission in the Royal Fusiliers, City of London Regiment.

FIFTY YEARS AGO.

Local Boards and Surveyors: Chippenham.

SIR,—The *Builder* lately contained an advertisement for a Surveyor for the Chippenham Highway District. Out of thirty-six candidates, by a committee appointed for that purpose, three were selected and were asked to attend the Board on the 10th inst. The committee sat only on the 7th. One of the three did not attend the Board. Of the two who did attend, one was a surveyor from South Wales and the other a small farmer resident in the district. Canvassing the way-wardens in any way was, according to the advertisement, "strictly prohibited" by the Board. I would call your especial attention to that fact.

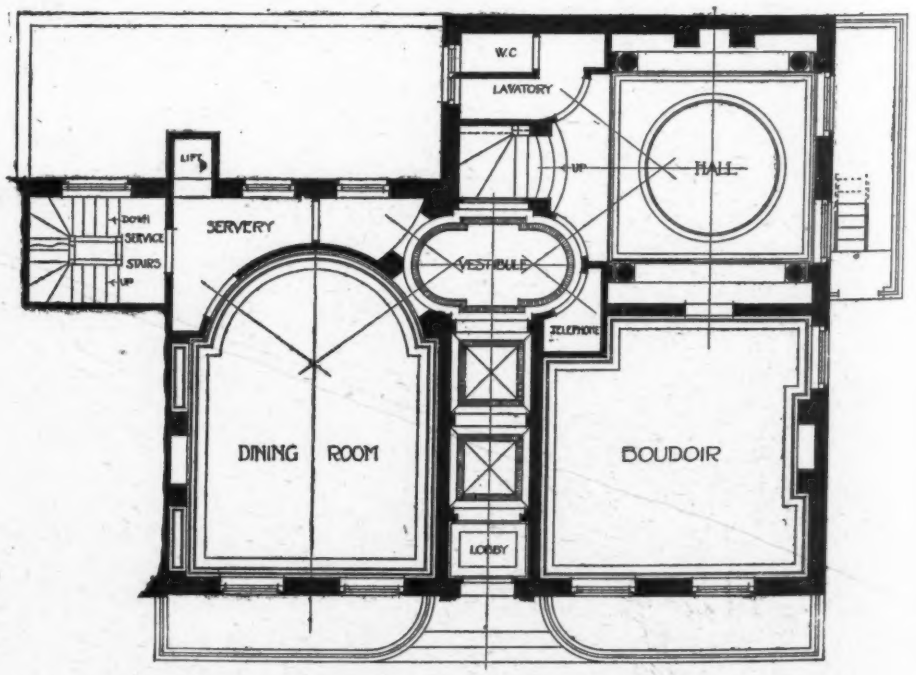
From the first, when the surveyor resigned in contempt of the Board, I heard it prophesied that the farmer would be elected. He was a tenant of the Vice-Chairman's, had been canvassing the way-wardens, and had received the promises of several of the way-wardens—the Chairman of the Board for one—before even the committee sat. Is it not, then, too bad to advertise at such expense in so many papers, causing so much trouble and anxiety to so many candidates; go through the farce of selection, and then put us to the expense of paying the travelling expenses of the candidate—candidates, if the other had attended?

The proceedings of the committee were so that even one of themselves protested against them. Does not this show the necessity of a Central Board, similar in constitution to the Poor Law Board? If you will expose this affair you will truly oblige a

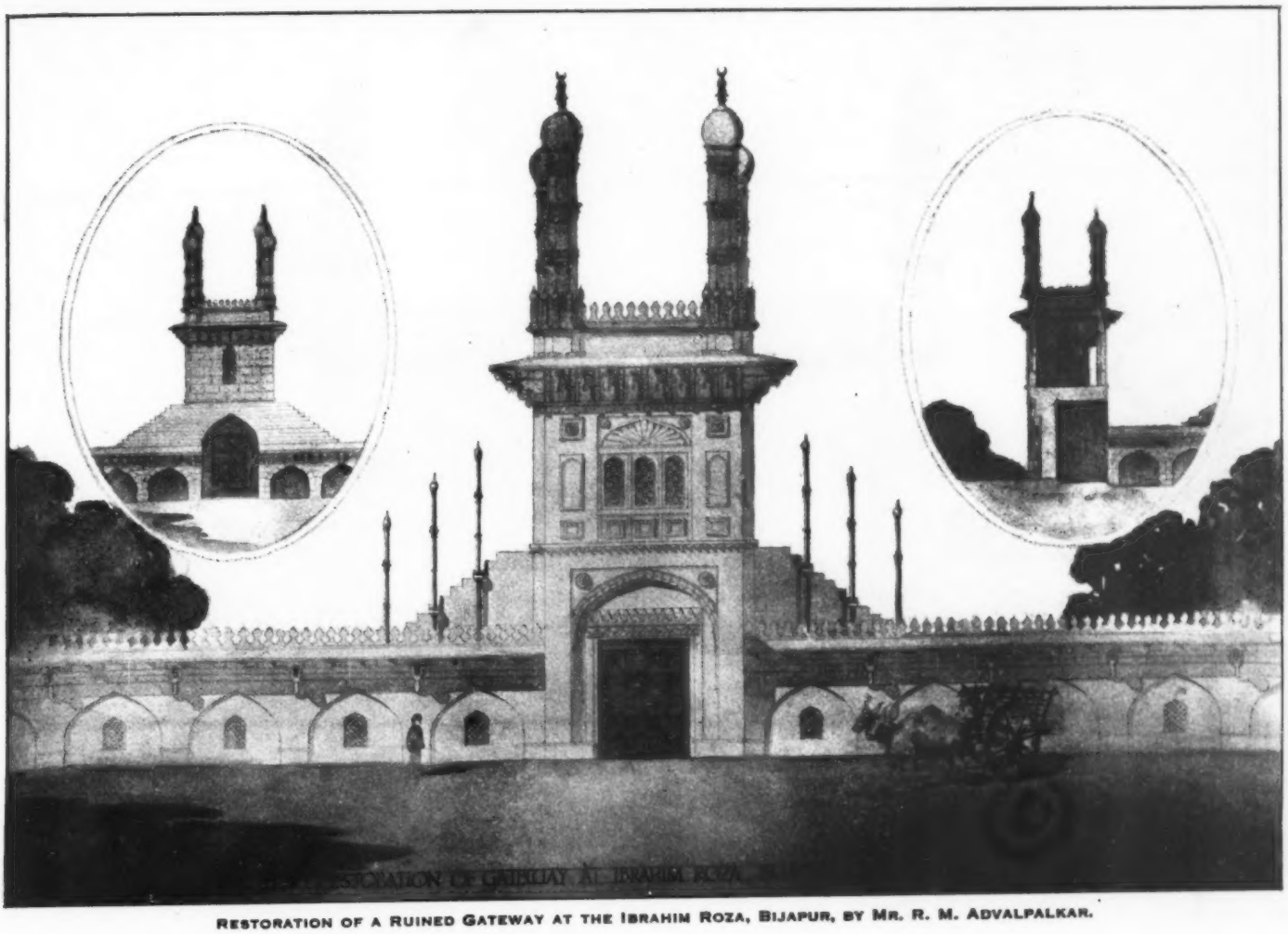
RATEPAYER.

I enclose my card and address, and will be in all ways responsible for the truth of this letter.

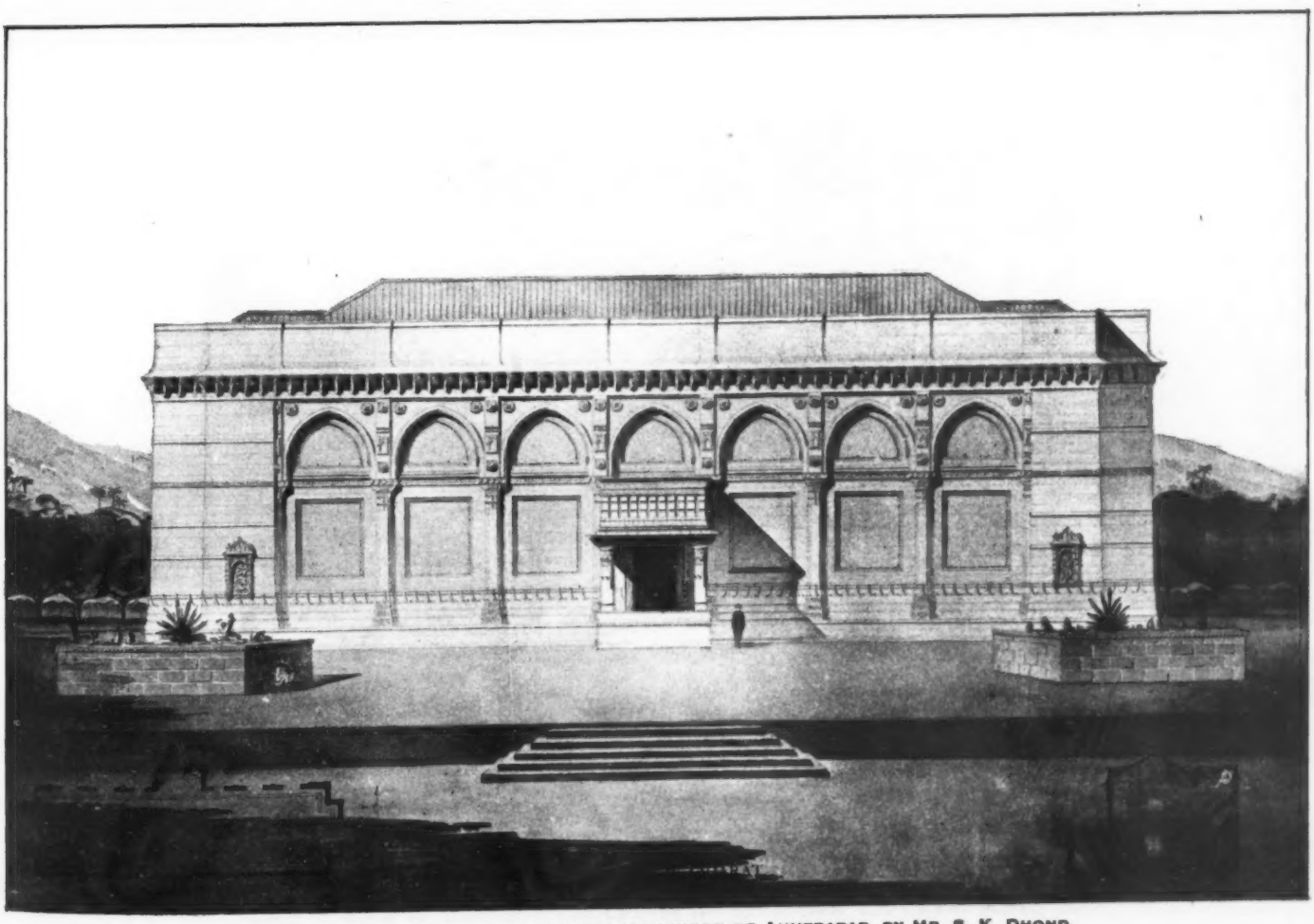
[*** From the *Builder* of September 15, 1866.—ED.]



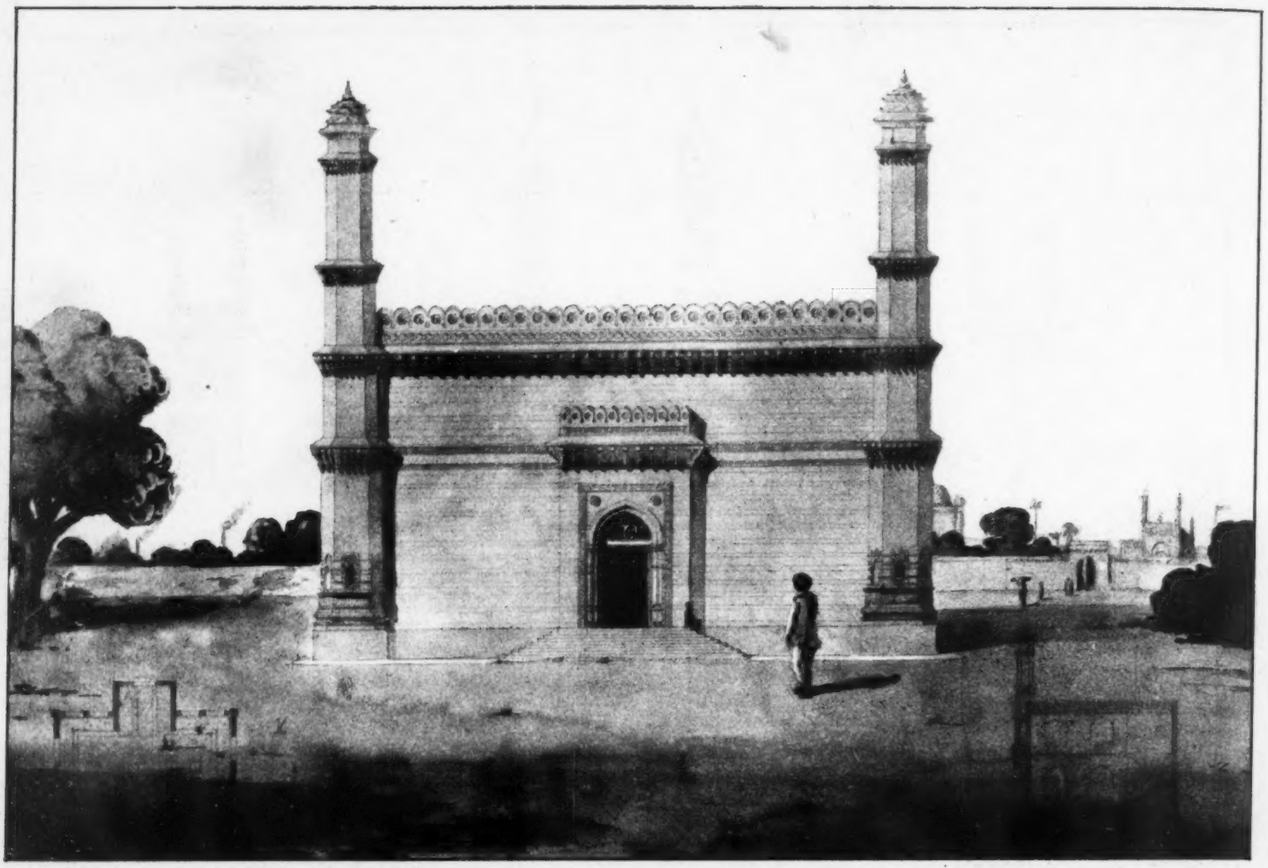
House, Buckingham-Street, Westminster, S.W.: Plan.
Mr. L. Stanley Crosbie, F.R.I.B.A., Architect.



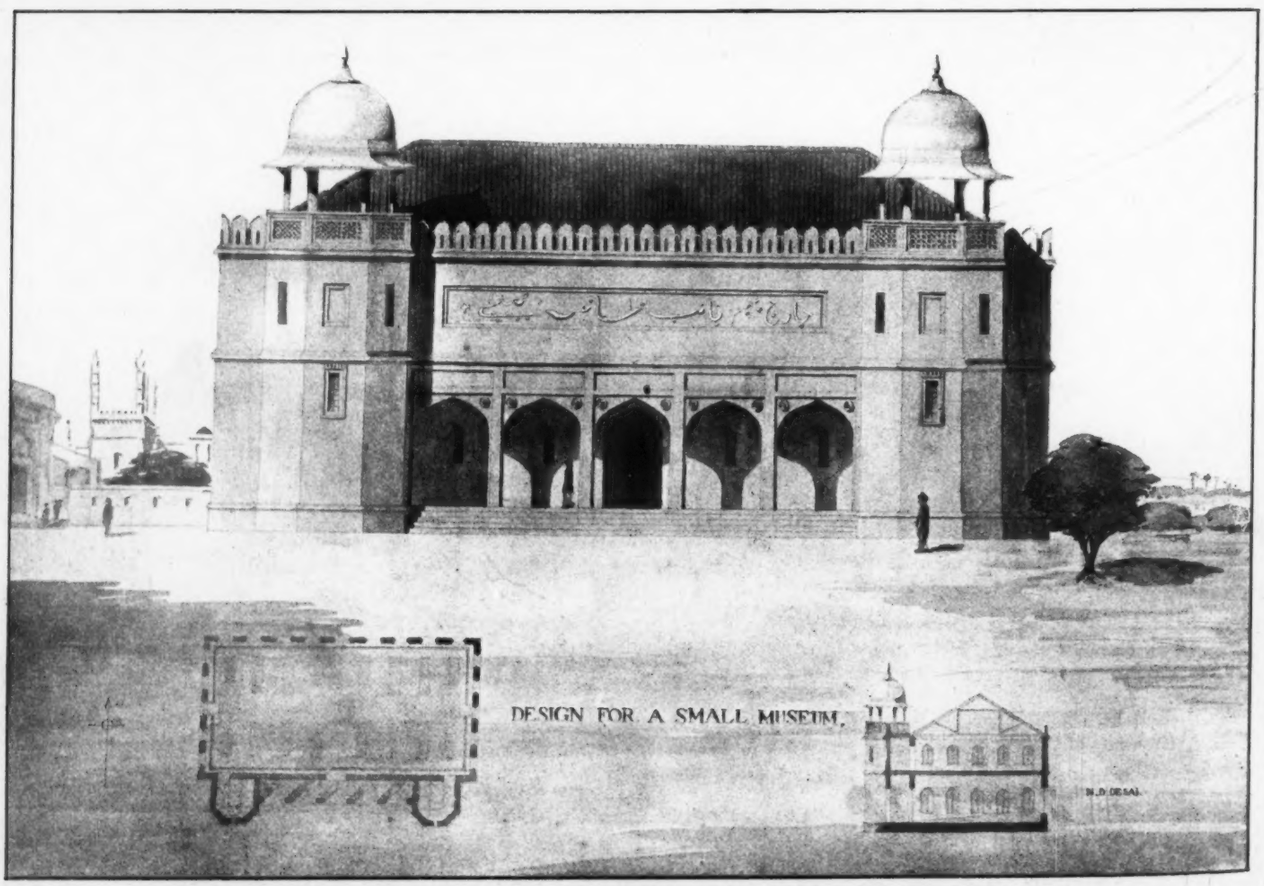
RESTORATION OF A RUINED GATEWAY AT THE IBRAHIM ROZA, BIJAPUR, BY MR. R. M. ADVALPALKAR.



DESIGN FOR A SMALL MUSEUM FOR THE NEIGHBOURHOOD OF AHMEDABAD, BY MR. S. K. DHOND.
INDIAN ARCHITECTURAL STUDENTS' WORK. BOMBAY.



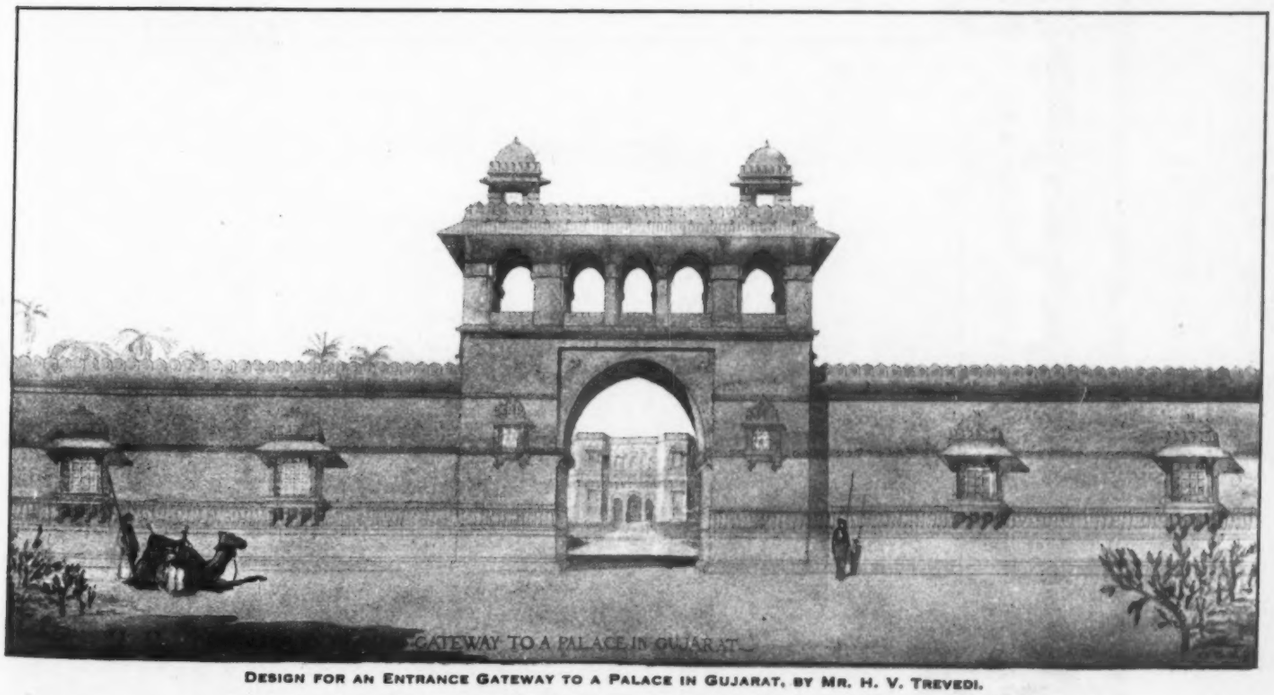
DESIGN FOR A SMALL MUSEUM FOR THE NEIGHBOURHOOD OF BIJAPUR, BY MR. T. M. SAVARDEKAR.



DESIGN FOR A SMALL MUSEUM FOR THE NEIGHBOURHOOD OF DELHI, BY MR. N. D. DESAI.

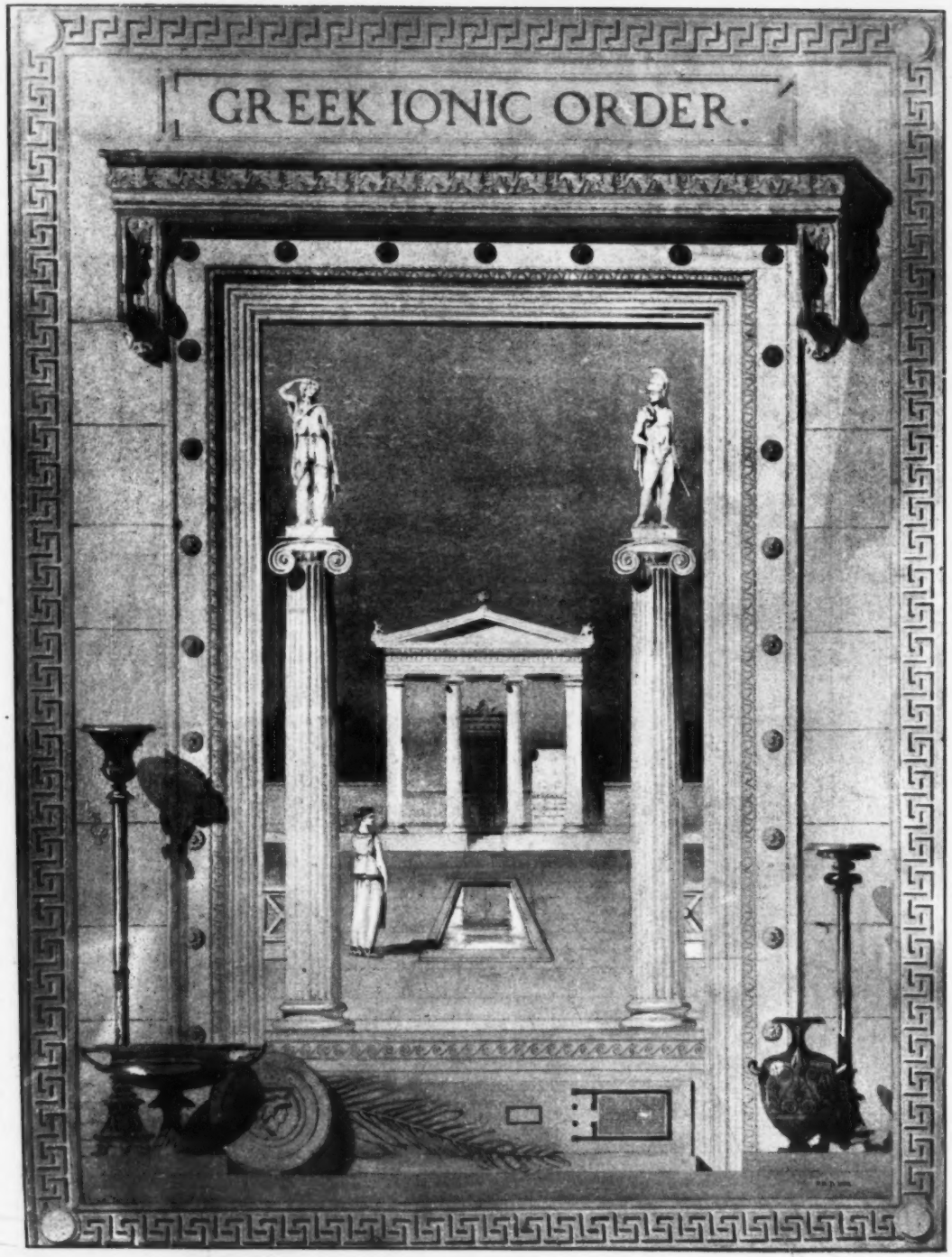
INDIAN ARCHITECTURAL STUDENTS' WORK. BOMBAY.

DESIGN FOR AN ENTRANCE GATEWAY TO A PALACE IN GUJARAT, BY MR. H. H. KHAN.

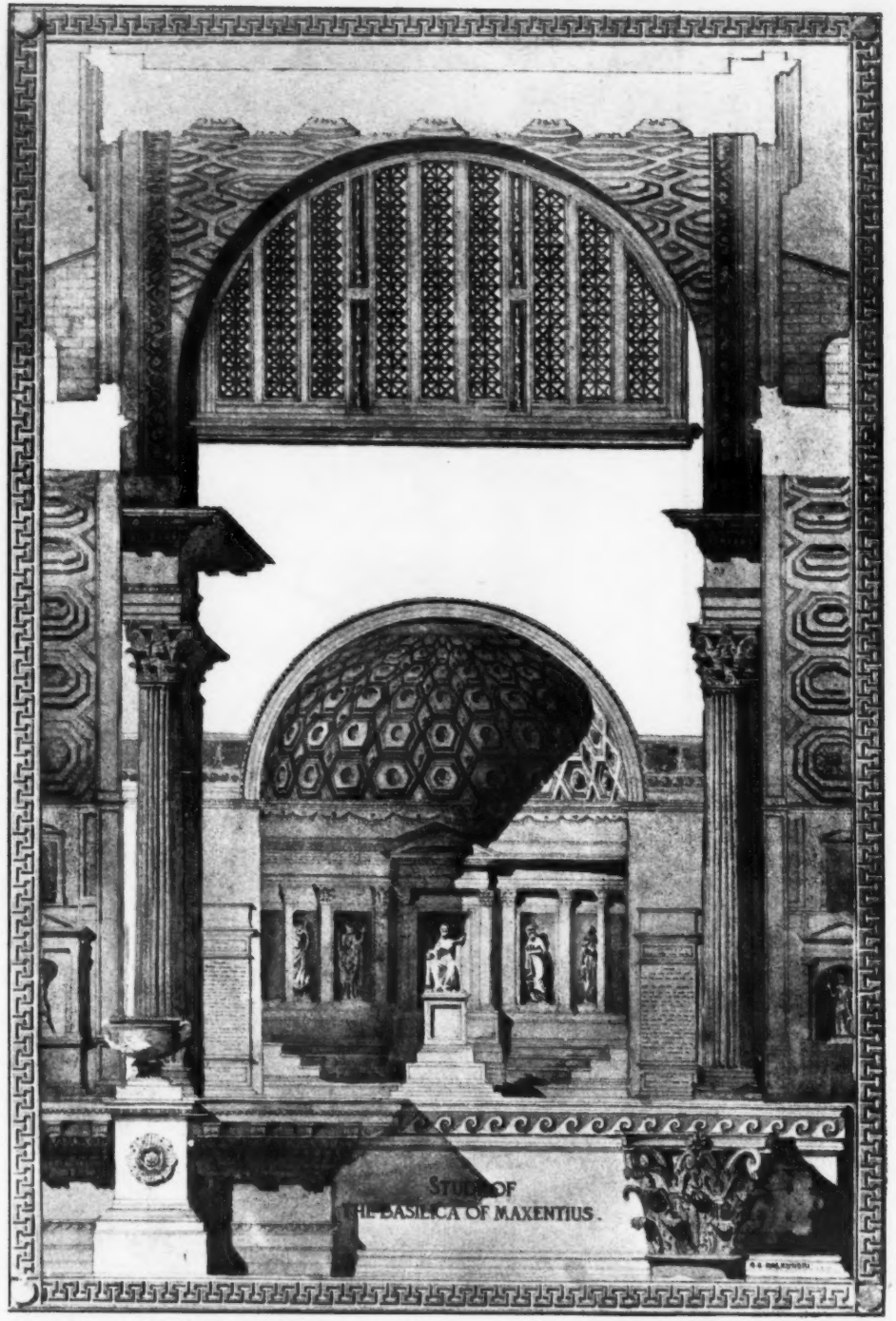


DESIGN FOR AN ENTRANCE GATEWAY TO A PALACE IN GUJARAT, BY MR. H. V. TREVEDI.

INDIAN ARCHITECTURAL STUDENTS' WORK. BOMBAY.

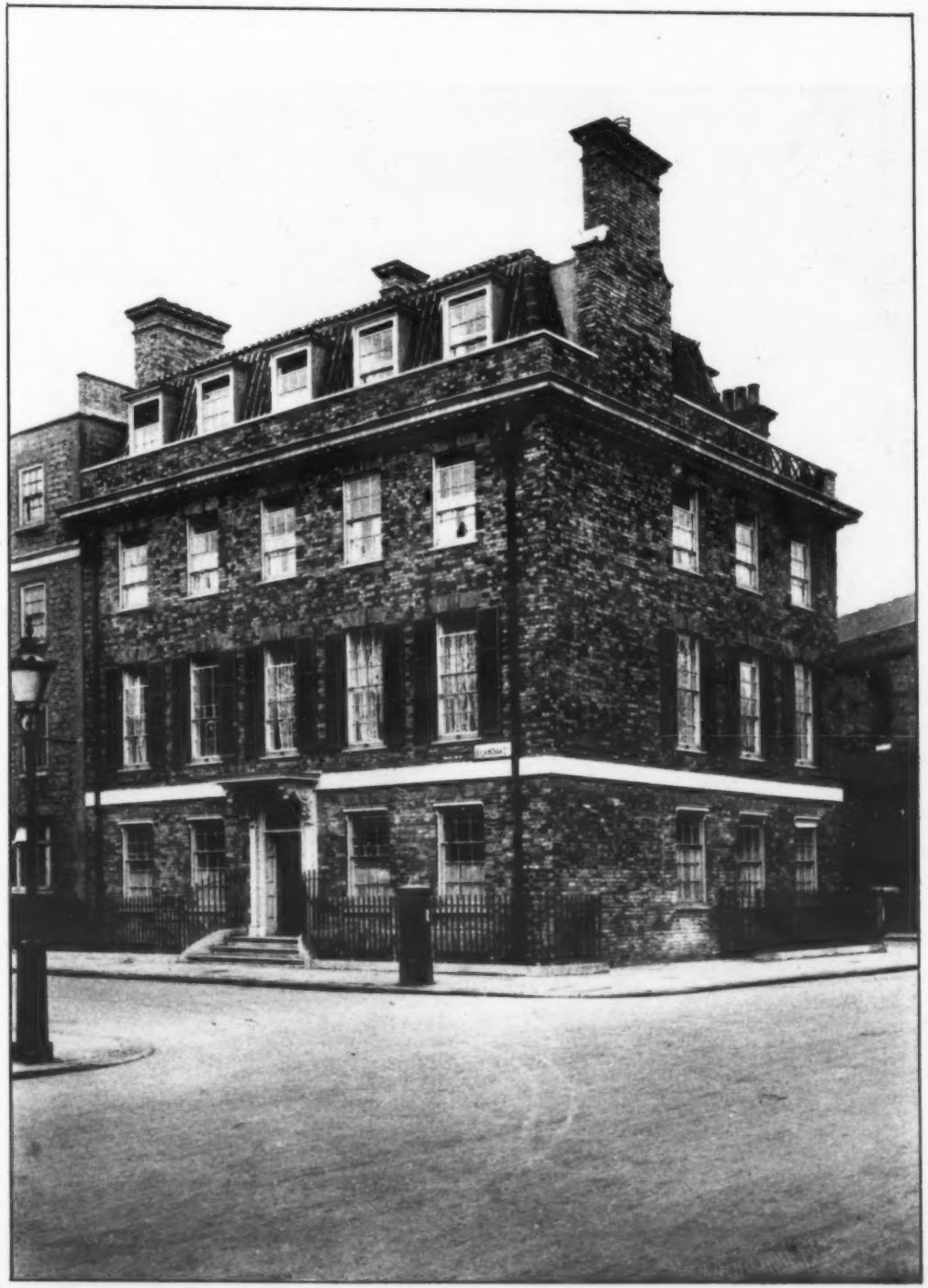


STUDY OF THE GREEK IONIC ORDER, BY MR. P. R TURNER.

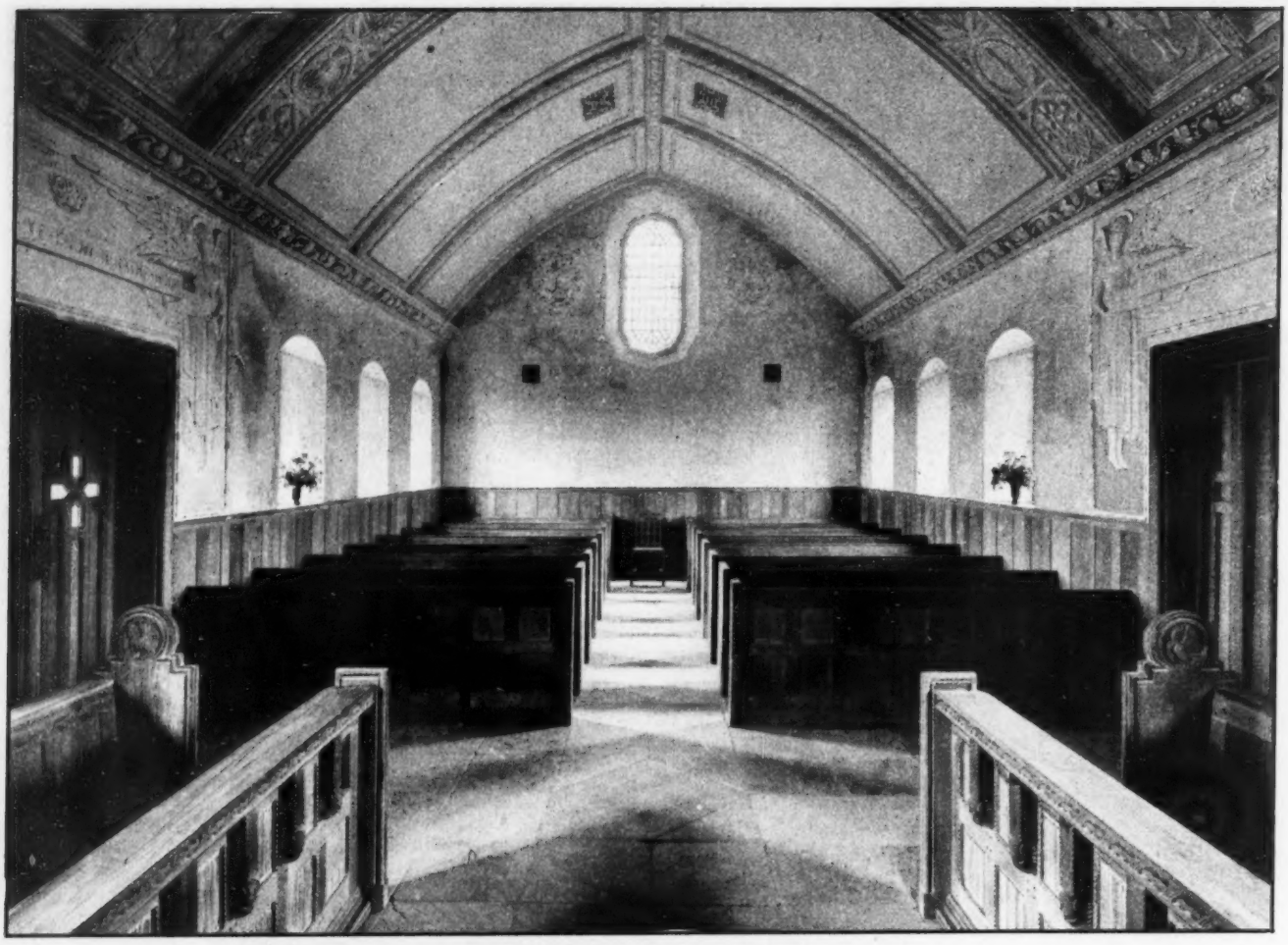


STUDY OF THE BASILICA OF MAXENTIUS, BY MR. G. S. KALKUNDRI.

INDIAN ARCHITECTURAL STUDENTS' WORK. BOMBAY.



HOUSE IN BUCKINGHAM STREET, WESTMINSTER, S.W.—MR. L. STANLEY CROSSIE, F.R.I.B.A., ARCHITECT.



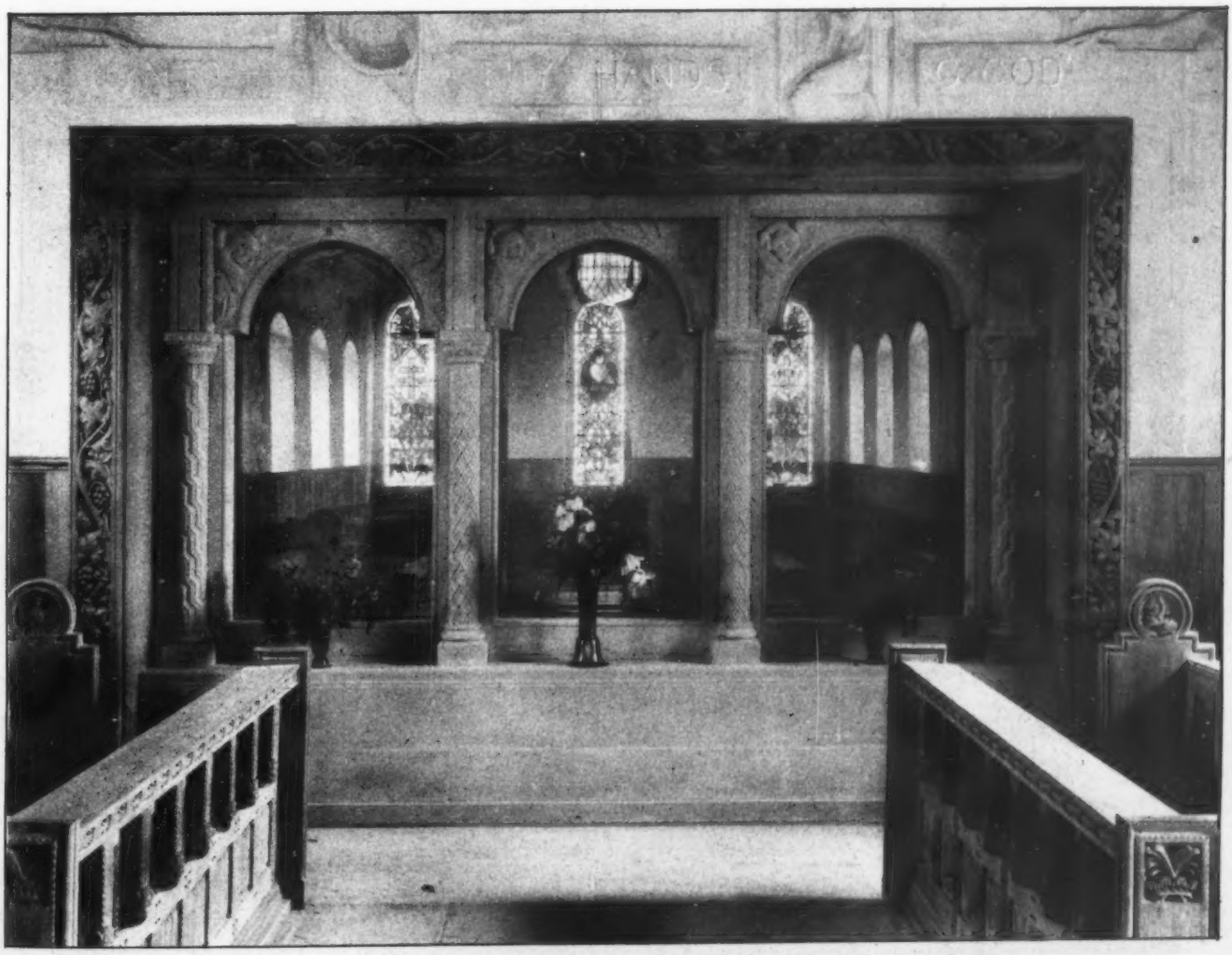
INTERIOR VIEW, FROM EAST END.

OAK SEATS AT EAST END.

WHITLEY AND MONKSEATON U.D.C. CEMETERY CHAPEL.—MR. E. CRATNEY, F.R.I.B.A., ARCHITECT.

PHOTO: THOS. LEWIS, LTD., BIRMINGHAM.

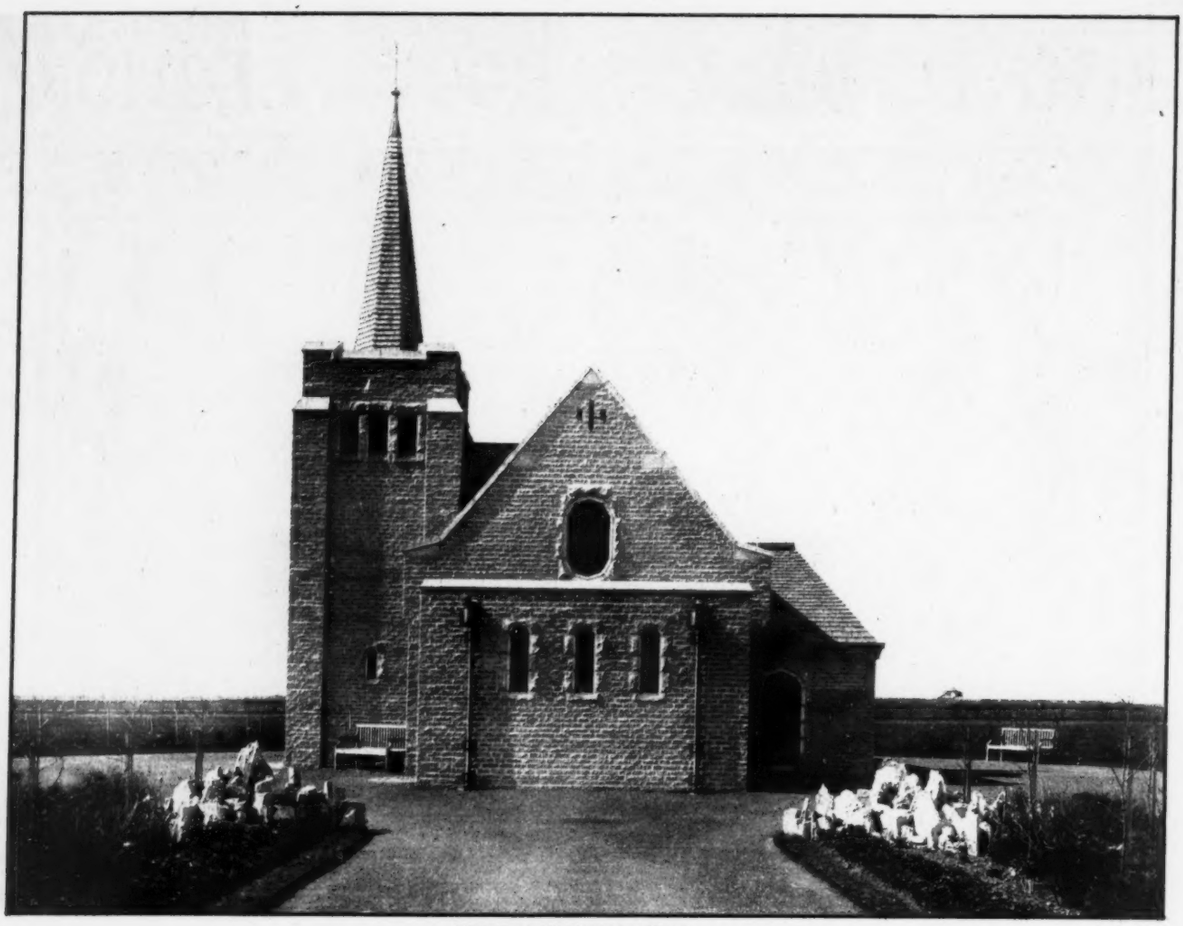
PLASTER DECORATIONS OVER ENTRANCE AND VESTRY DOORS.



STONE SCREEN BETWEEN CHAPEL AND MORTUARY.

WHITLEY AND MONKSEATON U.D.C. CEMETERY CHAPEL.—MR. E. CRATNEY, F.R.I.B.A., ARCHITECT.

PHOTO: THOS. LEWIS, LTD., BIRMINGHAM.



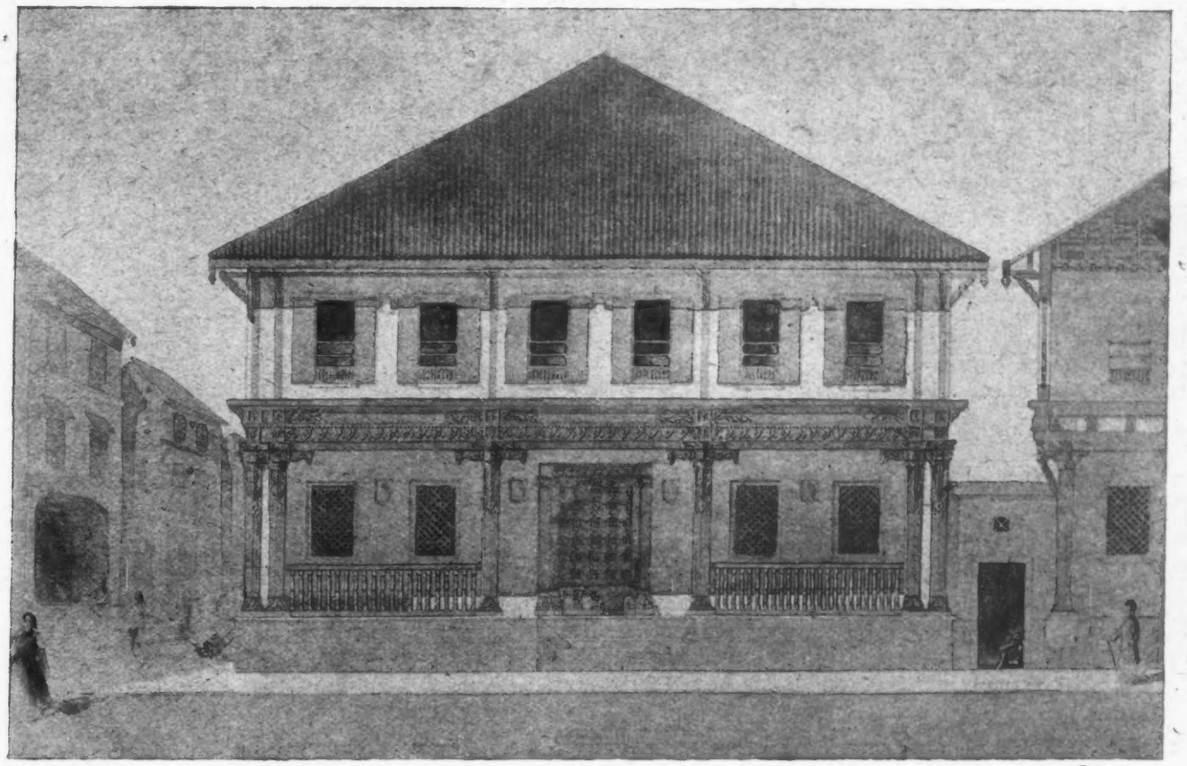
EXTERIOR VIEW FROM EAST.

INTERIOR, FROM WEST END, SHEWING MORTUARY SCREEN.

WHITLEY AND MONKSEATON U.D.C. CEMETERY CHAPEL.—MR. E. CRATNEY, F.R.I.B.A., ARCHITECT.

PHOTO: THOS. LEWIS, LTD., BIRMINGHAM.

ARCHITECTURAL SCHOOLS SECTION.



Analytical Study for an Old Bombay House.

By Mr. B. M. Advalpalkar.

THE SCHOOL OF ARCHITECTURE, BOMBAY.

THE School is a section of the Sir Jamsetji Jijibhai School of Art, which is the Government School of Art, Bombay, and is the only school in India having a complete course for the study of architecture. The course may be said to have begun in 1908. For some years previous to this a class had been held on one or two mornings a week in the Sir J. J. School of Art for the training of draughtsmen, but these classes were only in charge of a drawing master and had no pretensions of doing more than preparing students to become tracers or junior draughtsmen in offices, and it can hardly be considered to have given architectural education. But in 1908 a new scheme was drawn up and an architectural course of four years instituted. Lectures on Building Construction, and the History of Architecture, the study of the Orders, and visits to buildings in course of construction were included in the curriculum, and a staff of professional architects was engaged, which included the Consulting Architect to the Government of Bombay.

From that time the course has been gradually advanced and developed, the services of other visiting lecturers enlisted, and the equipment greatly improved.

In 1914 an officer in the Indian Educational Service was appointed by Government to the Sir J. J. School of Art to take charge of the School of Architecture, which until then had been carried on entirely by visiting lecturers, and the course was again revised and brought more into line with those of the schools of architecture of Europe.

About the same time a scheme was drawn up in connection with the school of art for a series of Government examinations in all branches of art, comprising, in addition to four grades of examinations in Painting, Modelling, Architecture, and Design, examinations in the various crafts practised in India, examinations for teachers of Drawing and Art, and for Drawing in ordinary schools. These Government examinations in Art superseded the annual examinations of the School, and the course of the Architectural Department was arranged to be one of five years, culminating in the Government Diploma in Architecture.

Before describing the curriculum of the School of Architecture it will be well to take note of some of the conditions peculiar to India which have to be considered. In the first place, the position of architecture and of architects in that country is as yet scarcely recognised.

The architect has very little standing, and practically no intelligent interest in architecture is evinced either by Europeans or Indians. There are but a handful of architects in the whole of India, and it is only in recent years that architects have been employed by Government in the design of even the most important official buildings. As yet their work is very limited in scope, and does not meet with the amount of appreciation it deserves. There is no architectural association or society of a really representative character in India; the small society existing in Bombay concerns itself mainly with the professional welfare of its members, and has hitherto taken no steps to encourage the art of architecture. Building work is almost entirely in the hands of engineers; indeed the degree of Licentiate of the College of Engineering, Poona (or a European degree), is the essential qualification for any one wishing to practise in Bombay.

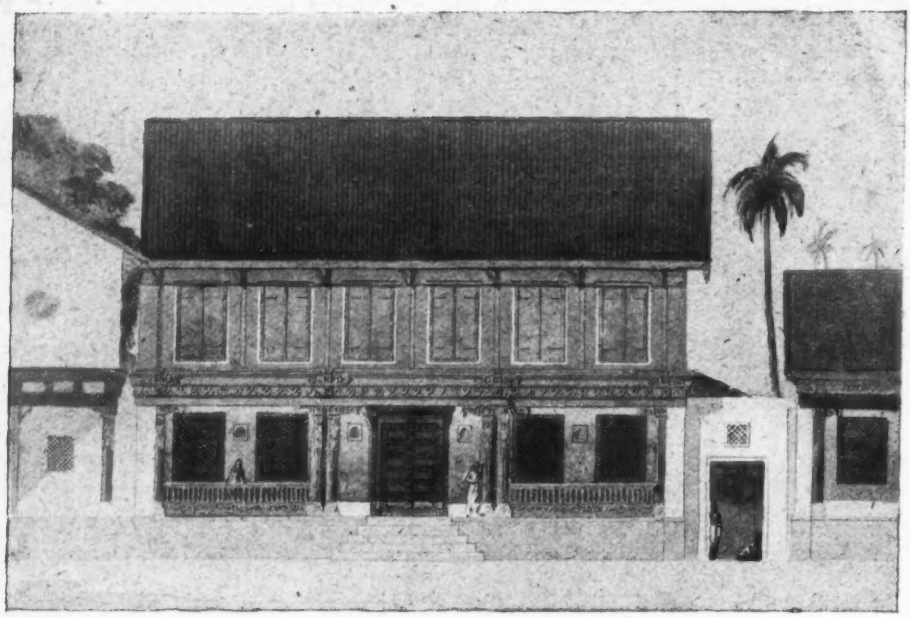
There arises, therefore, at the outset the practical consideration that until the status of architecture in the country is improved there is but a very limited outlet for advanced architectural students. The course of study in the School has of necessity to be influenced to some extent by the fact that except in the offices of the consulting architects to different Governments, and those of a few private architects practising in the country, a student upon leaving the School can only find employment in the offices of engineers and others who conduct building operations, where an ability to draw, a knowledge of building construction, and superficial acquaintance with the Orders are all the qualifications that are expected or desired in him.

Architectural students being in most instances not well off, and having to earn their living in such offices at the same time that they are receiving their education, are apt to become accustomed to practices which discount the value of what is taught them in the School.

The next question of importance in the study of architecture in India is that of style. The question of style is not of primary importance in a school of architecture. There are fundamental principles underlying all great architecture which are independent of style. That a building should be conveniently and effectively planned, that its structure, its character, and the purpose for which it is built should be æsthetically expressed, and that its design should be in accordance with certain principles of composition, are conditions which apply to all styles that have existed and to all that may hereafter be evolved, and these are the principles which form the basis of the architectural students' training in design.

A definite standpoint, however, is taken up as regards style. It is held that it is as undesirable as it is illogical for the styles of architecture of Greece and Italy, of France and of England to be taken as inspiration for the buildings of an Eastern country, rich in great building traditions of its own and inhabited by peoples of so different a character and with ideals so different from those of the peoples of Europe.

Unfortunately the great centres of building activity of the past in Western India are at some distance from Bombay. Ahmedabad in



Analytical Study for an Old Bombay House.
By Mr. T. M. Savardekar.

Gujerath is 300 miles; and Bijapur in the Deccan is 350 miles; Nasik is 120 miles distant; while Delhi and Agra are nearly a thousand miles away. But in considering the question of style in India it cannot be too often reiterated that one is dealing with a Continent and not a distinct and self-contained country, and that it is far more diversified as to race, language, and religion than is Europe, and that between the architecture of the old Delhi Empires and of the Mogul Kingdoms of Western India there are even greater differences in character than there are between the Gothic architecture of any two countries in Europe.

Indians, however, are great travellers, and the School is fortunate in having a special grant from Government for the purpose of conducting excursions, which enable students to see and to study at least some of the best examples of Indian art.

The student is continually urged to refer to and to employ, as far as is logical, the traditional styles of architecture of India, and the use of foreign styles is discouraged. The intention is not to foster the slavish imitation of any earlier style of architecture, the outcome of conditions and of a civilisation different from that of to-day, but to encourage the intelligent use of precedent and the application and development of the principles and ideals of the indigenous architecture existing in the country.

This brings us now to the master builder, who, we are told, is still carrying on the old traditional methods handed down to him by his forefathers. The evidence offered by writers and that encountered in one's own experience is not altogether convincing.

In small towns and villages where conditions are still more or less mediæval the "Indian Mistry" may conceivably carry on his work as a craftsman, but it is severely to be questioned if the work he produces has anything of the life in it that the old buildings possessed. An art or a craft that is truly alive must advance, and, since no appreciable development has taken place in the Indian crafts for approximately 200 years, it may be inferred that they are dead or dying—even if there were no other evidences of their decay.

But in the large towns and cities the conditions are quite different—in Bombay particularly so. The bazaar is far from presenting the Eastern picture of popular fancy. The streets roar with the noise of trams, motors, and cabs; the telephone, the typewriter, and the cash register have found their way into the shops, and all building activity is being ordered and governed by the edicts of the Improvement Trust and the building by-laws of the municipality; reinforced concrete construction is gaining favour and commercialism is rampant. This is an atmosphere in which the old master builder cannot live, nor can his traditional methods have a place. The engineers, who have the monopoly of the building work, have never appreciated the master builder, nor have they given him employment, and his end is rapidly approaching—if it has not actually come.

These are conditions which exist and have to be faced. But there are still great possibilities for the Indian craftsman if the building work of the future is in the hands of a school of properly-trained architects who have grown up to understand and appreciate the traditional architecture of their own country, and out of the present chaos some form of a Renaissance of Indian architecture may be brought about in which they can take their place and find scope for the inherited skill for which their forefathers were so justly famous. This is the ideal which is before the School.

There are already the beginnings of a movement in this direction, but it is at present only in its infancy, and it will take time before it assumes a definite form. It is not presumed either that it will make any immediate impression on public opinion. The prestige of the British Raj is so great, and Indians are so used to accepting implicitly whatever is English, that they are not prepared to see much good in anything that is not imported. Students consequently have no instinctive inclination towards Indian art, and there is a difficulty at first in turning them from their blind admiration of the travesties of Roman palaces, Gothic monasteries, and French apartment houses which have been erected during the last half-century, and opening their eyes to the beauty, the dignity, and the monumental qualities of the great masterpieces of their own architecture.

The necessity of encouraging students possessing the highest standard of general education to enter the architectural profession, if real progress is to be made, has been recognised. The qualifications demanded of a candidate seeking admission to the School have been therefore raised. Students now must be matriculates of one of the Universities of India, or must hold the Government School Final Examination certificate of a corresponding standard, and must have passed the Government Intermediate School Drawing Examination before they are accepted, unless they possess exceptional artistic qualifications. Such students will not only be better fitted by education to profit by the training which is offered them, but will be more likely to remain true to the ideals and principles in which they have been grounded.

The majority of the students are Hindus, who come from all parts of India, from Madras, Bengal, the Punjab, Hyderabad, Baroda, and other Native States, as well as from the different divisions of the Bombay Presidency. Parsees, Mohammedans, Jews, Goanese, Anglo-Indians, and Europeans make up the remainder. The classes are held in the mornings from 7.30 to 9.30, in order to enable students to attend their offices during the day.

The first year's course consists of Freehand Drawing and Modelling, which are done at the Sir J. J. School of Art, Geometry, Mensuration, Carpentry, and Elementary Construction, Architectural and Measured Drawing, including exercises in observation, sketching from memory, drawing to scale from sketches, and the application of geometry to ornament. Students are also taught how to make tracings on linen and to prepare blue prints, the ability to do which being a primary qualification for employment in an office. In the vacations the students are required to give their time to measuring and sketching.

In the second year the majority of the time is devoted to Construction, the other subjects undertaken being Perspective, Sciography, and Surveying and Levelling.

At the end of the second year the student sits for the Government Elementary Examination in Architecture.

In the third year the course asserts its independence of the requirements of the business office, and lectures on the History of Architecture are commenced, and the work in the studio given to the study of the Classic Orders of Architecture, exercises in Composition and analytical studies of Greek, Roman, and Indian buildings, with special regard to plan, construction, and general principles. Lectures are also given on materials and more advanced construction, and the student makes working drawings of a small building of his own design. Measured drawings and sketching are done in the vacations, and at the end of this year the Government Intermediate Examination in Architecture is taken.

In the fourth year the lectures in History are continued, the work in the studio consisting of analytical studies of Indian and of Classic Renaissance buildings, further exercises in Composition, and simple problems in Design. Lectures are given on Stresses and Strains, and Estimating and Quantity Survey, and complete working drawings are made of one of the problems in design, with calculations of the stresses and strains in the steel construction worked out and the quantities taken off and an estimate of cost prepared.

Students are allowed to work on this subject during the vacations, as it is taken into consideration in the Government Advanced Examination for which they sit.

On account of the war the Government have been unable to provide a grant for the erection of a special building for the School, which a lack of accommodation in the classrooms at present available makes necessary, or to provide for the addition to the staff of more visiting lecturers. In these circumstances it has not been possible as yet to start the fifth-year class, but the course which has been prepared for it is devoted chiefly to Architectural Design, with drawing from life and modelling and lectures on the Theory of Design and Composition, and on Hygiene and Electrical Engineering.

Students will be required to make complete measured drawings of an old Indian building of importance or a restoration of a ruined building, and at the end of this year they will sit for examination for the Government Diploma in Architecture.

The accompanying illustrations show two studies by third-year students and a number of studies and designs by students of the fourth year.

A BRITISH RED CROSS STAMP.

British stamp-collectors have designed a war stamp, which has been engraved and printed gratuitously by Messrs. Perkins, Bacon, & Co., the printers of the first postage stamp ever issued, the historic "Penny Black" English stamp of 1840. These war stamps are being sold at a penny each, or 6d. the set of six different colours, by the National Philatelic War Fund, 151, Strand, W.C. The proceeds go to the British Red Cross and St. John of Jersusalem. The design is emblematic of Britain taking up the sword of justice, and the Philatelic Secretary to H.M. the King, in accepting the gift of a special die proof of the stamp for the King's collection, writes: "His Majesty is very pleased with the design and thinks it most appropriate."

THE BUILDING TRADE.

BUILDING WORK IN PARIS.

THE present restriction of building work in London will no doubt have the effect of a sudden congestion of business for architects and builders after the conclusion of peace for the continuation of the various work remaining in abeyance since the recent order.

In Paris there has not been up to the present any restriction in building work. On the contrary, all facilities are being given by the authorities for the carrying out of any private work, as far as may be done with the rather restricted supplies of materials and the shortage of labour, given, that is, that such private work does not interfere with work for military purposes.

Of course, all materials, especially those which require much manual labour for their extraction, or machinery and coal for their manufacture, such as cement, lime, bricks, etc., have increased enormously in price. Steel is almost out of the question, so high is the cost of supply and erecting, and only light steel can be obtained for private work. The only labour to be obtained is either casual labour by men who are on leave or on the reserve, or by men who are above the military age—and this is higher than that at present in England—with the aid of small boys. But despite these difficulties there has been during the last few months some resumption of building work at Paris, chiefly, however, for the continuation of buildings which had to be abandoned at once on the order of mobilisation at the outbreak of hostilities.

In London building work has been continued in a large measure until the recent restriction orders. At Paris all building work, large or small, ceased immediately on the day of the mobilisation order, and the various works have remained in the same state until a few months ago. The architects and most of their draughtsmen were called up under the mobilisation order, the builders lost their staff and nearly all their workmen, the offices and yards were closed, and all work became impossible.

Paris, therefore, having suffered for nearly two years a period of almost complete stagnation in the building world—of course, as regards private and civil work—is now gradually reviving in this respect; whilst London, having profited during the same period of time by the continuation of work, is now suffering by the restriction orders. The Paris authorities, taking into account that some compensation is due to architects and builders after this long stoppage of work, are only too willing to afford every possible facility for the continuation of work, as long as such work does not interfere with war work. Very few new buildings, if any, have been put in hand; the resumed work is chiefly confined to the completion of the various buildings abandoned since the war.

In the first place, the present cost of materials—and it is likely that the prices will increase day by day until some time after the war is ended—and the uncertainty of the future state of business and the value of rentals are not favourable for inducing property owners to undertake any new building work for the present. Until prospects are more certain building work will be mostly limited to the reconstruction of the devastated towns and villages, and private work will remain in abeyance. It seems hardly likely that there will be any labour troubles in France, in any case amongst the building trades, for the men will only be too glad to return to their usual occupations at the same or slightly increased wages.

An interesting venture was that, therefore, made by the Société des Music Halls Parisiens (Mr. Alfred Butt, director) in deciding to go on with the construction of their new music-hall in the Rue de Mogador at Paris. It is due to the energy, foresight, and enterprise of Mr. Alfred Butt that the work was started in June of last year, despite all the difficulties which were certain to be met with in regard to materials and labour. Mr. Bertie Crewe, architect of the London Opera House, is the architect of this new music-hall, which when completed will be one of the most up-to-date, compact, and tastefully decorated music-halls in Paris. The general building contractor, Mr. F. G. Minter, of Putney, has contrived, in spite of the many difficulties which he met with at the outset of the work, to carry on the building successfully to its present stage of about half completion. The architect, the contractor, and the resident architect, Mr. Arthur Vye-Parminter, of Paris, may be said to be enjoying a unique experience of building work in Paris during the war, for this building is certainly the only one of any importance in Paris, and probably in France, except war building work, which has been contracted for and executed since the war.

The Paris authorities have been good enough to afford all possible facilities and to avoid placing difficulties in the way of the work, which has been almost entirely executed with the help of labour from refugees during the earlier portion and since by workmen of above military age and young apprentices. It is expected that the new music-hall will be completed in time for the rejoicings and festivities which will take place after the declaration of peace.

GENERAL BUILDING NEWS.

SCHOOL, LOANHEAD.

The new school for senior pupils erected by the Lasswade School Board at Loanhead was opened recently. The school consists of ten classrooms, and will accommodate 500 pupils. In addition to the classrooms there are special rooms for the teaching of art, science, cookery, and manual work, and a central hall, which will be fitted up as a gymnasium and can be used for assembly purposes. The total cost is over £10,000. The architect was Mr. J. Inch Morrison, A.R.I.B.A., Edinburgh, whose design was chosen in a competition between a selected number of architects.

TRADE NEWS.

Boyle's latest patent "air-pump" ventilators, supplied by Messrs. Robert Boyle & Son, ventilating engineers, 64, Holborn-viaduct, E.C., have been adopted for the North Evington Hospital, Leicester.

The Parish Church, Eyemouth, is being ventilated by means of Shorland's patent exhaust roof ventilators supplied by Messrs. E. H. Shorland & Brother, Ltd., of Failsworth, Manchester.

DECEASED BUILDER'S ESTATE.

The late Mr. Henry Matthews, builder and contractor, of Bournemouth, who died on July 5, left estate of the gross value of £6,351.

SECOND-LIEUTENANT J. MURLY-GOTTO, A.M.INST.C.E., R.E.

Second-Lieutenant James Murly-Gotto, R.E., who died on August 20 in hospital, of wounds received on August 12, was the eldest son of Mr. and Mrs. Murly-Gotto, of Woodhambury, Woking. He was educated at Haileybury and Pembroke College, Cambridge. He graduated in engineering, and became an Associate Member of the Institution of Civil Engineers.

THE CROWN PRINCE'S HOUSE AT POTSDAM.

In reference to the illustrations of this building which we gave in our last issue, we should like to mention that we are indebted to the Nyewood Brick and Tile Company, 28, Newman-street, W., for several of the drawings which we published. Prior to the war the Nyewood Brick and Tile Company had tendered for work in connection with the erection of this building, and had it not been for the outbreak of hostilities their contract would no doubt have been accepted.

PROPOSED NEW BUILDINGS AND OTHER WORKS.*

IN these lists care is taken to ensure the accuracy of the information given, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works, at the time of publication, have been actually commenced. Abbreviations:—T.C. for Town Council; U.D.C. for Urban District Council; R.D.C. for Rural District Council; E.C. for Education Committee; L.G.B. for Local Government Board; B.G. for Board of Guardians; L.C.C. for London County Council; B.C. for Borough Council; and P.C. for Parish Council.

Aberdeen.—The Plans Committee of the Aberdeen T.C. has passed the following plans:—Underground petrol store, Berryden-road, in connection with the premises of the Northern Co-operative Company, Ltd., per Mr. John G. Park, engineer; conservatory at the rear of the dwelling-house, No. 26, Forest-road, for Mr. John Spencer, oil manufacturer, per Messrs. D. & J. R. M'Millan, architects; garage at the rear of the dwelling-house, No. 2A, Albyn-place, for Dr. Alexander Mitchell, per Mr. H. Macgregor, joiner; wood store on the south side of Palmerston-place, for Mr. Charles Lyon, timber merchant, per Mr. W. E. Gauld, architect; alterations in connection with stabling premises, Princes-street, for Mr. George Bothwell, grain merchant.

Abertillery.—The Nantyglo and Blaina D.C. have written to the Abertillery D.C. intimating their readiness to receive a deputation on the question of the erection of a joint isolation hospital.

Argentina.—The *Boletin Oficial* (Buenos Aires) of July 17 publishes a Decree approving a project for the carrying out of sanitation and water supply works at a hospital at Allen, Territory of Rio Negro, at an estimated cost of 58,401 pesos currency (about £5,100). Another Decree published in the same issue of the *Boletin* approves projects for works of a similar nature at a hospital at Resistencia, Chaco Territory, at an estimated cost of 75,156 pesos currency (about £6,600). The *Boletin* of July 17 also contains a Decree approving an ad referendum contract entered into between the "Comisión Asesora de Asilos y Hospitales Regionales" and Juan B. Beltrame, under which the latter will carry out the construction of a hospital in La Rioja (Andine Territory) for the sum of 490,790 pesos currency (about £42,940).

Ashton-under-Lyne.—The Governors of the Ashton District Infirmary recently passed a resolution recommending that the proposed extension to the Infirmary building should be carried out. The scheme, which will involve an expenditure of about £3,000, includes the erection of two new wards, a day-room, and accommodation for the nursing staff.

Belfast.—At a recent meeting of the Belfast Harbour Commissioners it was agreed to erect an additional fountain near the Clarendon Dock bridge, and that the fountain at the east side of York branch dock be removed to a new position. It was also reported that negotiations had been completed with Messrs. Harland & Wolff for the letting of over 41 acres of additional land for shipbuilding purposes and other kindred works, and that Messrs. Workman, Clark, & Co. are also about to increase their building slips, and for this purpose they require additional land, for which they are at present negotiating.

Braintree.—Plans for the erection of new buildings at Manor Works and for alterations on premises in High-street, for Messrs. Townrow Bros. have been passed by the U.D.C.

Clogher.—Having closed the body of the workhouse and casual wards, the Clogher Guardians have appointed Messrs. Townsend & Son, architects, to draw up a specification for the basis of tendering for the pulling down of the fabric of the house.

Clutton.—The B.G. has decided to inform the L.G.B. that it is prepared to undertake and carry out after the war the building of a home for the children in the house, and also improvements in the house, provided the money for the purpose can be obtained.

Coatbridge.—The Coatbridge United Young Men's Christian Association has resolved, with the aid of the Central Council for Scotland and the Munitions and War Emergency Committee, to proceed with their suspended scheme of building a new institute in Bank-street.

Consett.—The Consett U.C. has decided to purchase twelve houses in John-street, and six in William-street, which had been considered unfit or habitation. The Consett Iron Company's scheme for the reconstruction of the houses in the company's rows will be restarted after the war. The scheme will cost at least £20,000.

Corstorphine.—The Midlothian C.C. Suburban District Committee recently considered the

* See also our list of Competitions, Contracts, etc., on page 162.

question of surface water drainage at Corstorphine, and it was decided to ask the Water of Leith Purification and Sewerage Commissioners to appoint representatives to meet the District Committee to discuss the question.

Darwen.—The Building Committee has approved of the following plans:—Boiler-house at Shorey Bank, for Messrs. Cooper Bros.; heating chamber at Earcroft School, for the trustees of Earcroft School; two sculleries in Philip-street, for Mr. Thomas Proctor; and new boiler-house at South Belgrave Mill, for the Wall Paper Manufacturers, Ltd.

Durham.—At a recent meeting of the U.D.C. the following plans were approved:—United Automobile Services, Ltd., for a carbide and petrol store at Shaw Wood; Bank of Liverpool, for conversion of shop in Market-place into house. It was recommended that a temporary urinal be erected at the Park wall on the site already agreed upon, at a cost not exceeding £120, and that tenders be obtained for the work. The question was referred back to the Finance and General Purposes Committee.

Glasgow.—Glasgow Dean of Guild Court has granted a lining to the Joco Proofing Company, Ltd., to erect a power-house station as an addition to their works at Netherton, Anniesland.

Hartlepool.—In reply to the L.G.B. inquiries in regard to public works to be started after the war, the Hartlepool T.C. have decided to state that they propose to proceed with their housing scheme, and other probable works are the proposed extension northwards of the Promenade, the protection of the cliff to the south of the Promenade, and the provision of a new school at Throston; while reference may also be made to a project for a tunnel under the channel between Hartlepool and Middleton, or for bridge over it.

Hebburn.—The U.D.C. has instructed the Deputy Surveyor to prepare part of a housing scheme.

Holbrook.—The rector and parishioners of Holbrook propose to restore the parish church at the earliest opportunity.

India.—Land is being acquired for a railway siding to a new jute mill which it is proposed to construct at Jugaddal and Autpur.

Kilkeel (Ulster).—Arrangements have been made for the erection of a new Orange Hall, with caretaker's house, in Greencastle-street, Kilkeel. Plans and specifications have been prepared by Mr. J. B. M'Keown, architect.

Leeds.—The City Council has agreed to seek L.G.B. authority for preparing a town-planning scheme for the Moortown area.

Poole.—An appeal is being made by the Cornelia Hospital Committee for funds towards an extension.

Rosyth.—Dunfermline School Board recently considered a letter from the Admiralty regarding the provision of school accommodation at Rosyth. The Board agreed to proceed with the erection of classrooms at once and to leave over meantime other rooms embodied in the original plan.

Rotherham.—Funds are being raised for building a mission church to serve the Ryecroft and Sandhill districts of the parish.

Russia.—The official *Bulletin of Laws* (Petrograd) of July 29 to August 11 publishes an Imperial Decree authorising the town of Ekaterinodar to conclude a bond loan of 4,055,000 roubles, of which the undermentioned amounts are to be expended as follows:—For paving market places and for construction of shops, 1,046,000 roubles; for construction of various municipal buildings (town hall, fire brigade and police stations, library, chemists' department, lying-in home, etc.), 856,000 roubles; slaughterhouse equipment, 331,000 roubles; reclamation of Karasun marsh, 200,000 roubles; purchase and erection of a Diesel dynamo engine at electrical works, 84,000 roubles; plant for hydro-electric power station, 82,000 roubles; and for other town works, 105,000 roubles.

St. Asaph (Flints).—The following plans have been before the R.D.C.:—Extension of a cinema at Kinmel Camp, for Mr. Saronie; pigsties at Brynawel, Dyserth, for Mr. Jno. Jones; shop at Kinmel Camp, for Messrs. Peeney & Sidoli.

Stockton.—With reference to a circular letter received by the C.C. from the L.G.B. asking for information as to the public works proposed to be executed after the war, the Clerk reports that the schemes the Council contemplate carrying out is one in respect of the drainage of Havertonhill—which has not yet been submitted to the L.G.B.—and some small work at Carlton Ironworks.

Swansea.—Instructions have been given to the Surveyor to prepare plans for the erection of a convenience in Welcome-lane at an estimated cost of £1,000.

Teignmouth.—The U.C. has passed plans submitted by Messrs. T. Rider & Son, London, on behalf of the Committee of Management of the Teignmouth Hospital, for the erection of a temporary wooden building for the accommodation of twenty wounded soldiers.

Weardale.—It is reported that the Iron Company propose to build fifty houses for their workmen at the quarry near Westgate.

West Hartlepool.—Plans passed by the T.C.:—Expanded Metal Company, extension of temporary workshop in works off Greatham-street (as a temporary building); Mr. A. Stephenson, altering shop into dwelling-house, 67, Alma-street; trustees of the late Mr. H. B. Olsen, alterations to offices, 70, Church-street; West Hartlepool Corporation, boiler house, Electricity Works extension, Seaton Carew Iron Works; Mr. M. Pickering, store and cart shed, Back Tweed-street; Mr. J. W. Cameron & Co., Ltd., internal alteration, Ward-Jackson Hotel, Lynn and Musgrave streets.

RATES OF WAGES IN THE BUILDING TRADE.

THE following are the present rates of wages in the Building Trade in the principal towns of England and Wales. It must be understood that, while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur:—

—	Masons.	Bricklayers.	Carpenters, Joiners.	Plasterers.	Slaters.	Plumbers.	Painters.	Masons' Labourers.	Bricklayers' Labourers.	Plasterers' Labourers.
	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.
Aberdare	9½	9½	9½	9½	9½	9	8	6½	6½	6½
Accrington	10	10	10	9½	9	9	9½	6½	6½	6½
Altrincham	9½	10½	11	10	8½	10	10	7½	7½	7½
Ashton-under-Lyne	11	11	10½	10½	9½	11	10	7	7½	8
Barnsley	10	10	9½	9½	9	9½	8½	7½	7½	7½
Barrow-in-Furness	10½	11	10½	10½	10½	10½	10½	8	8	8
Barry	9½	9½	9½	10	—	9	8½	6½	6½	6½
Bath	9	9	9	8½	7½	9	8	6½	6½	6½
Bedford	8	8	9	8½	8	9	6½	5½	5½	6
Birkenhead	1/-	1/-	1/-	1/-	1/-	1/-	11	8	8	8
Birmingham	11½	11½	11½	11½	10½	11½	10½	8½	8½	8½
Bishop Auckland	9	9	9	9½	11	9	8	6½	6½	7½
Blackburn	10	10½	10	10	9½	10	9½	7	7½	7½
Blackpool	11	9½	9½	9½	8½	9½	9½	6	6	6
Bolton	10½	11	10½	10½	10	10†	9½	6–7	7	7½
Bournemouth	8½	9	9	9	8½	9	8½	6½	6½	6½
Bradford	10½	10½	10	10	10	10	9½	8	8	8
Bridgwater	6½	6½	6½	6½	6½	6½	6	4	4	4
Brighton	9	9	9	9	—	9	7½	6½	6½	6½
Bristol	11	11	10½	11	—	11	10	8	8	8
Burnley	10	10½	9½	9½	8½	9½	9½	7	7½	7½
Burton-on-Trent	9½	9½	9½	10	9	9½	8½	7	7	7
Bury	11	11	10½	9½	10	10½	10	7	7½	7½
Cambridge	9½	9	9	9½	9½	9½	7½	6	6	6
Canterbury	8½	8	8	10	—	8½–9	7	5	5	5
Cardiff	10½	10½	10½	10½	10½	10½	9½	7½	7½	7½
Chatham	8‡	9‡	9‡	9‡	9‡	9‡	7½‡	6‡	6‡	6‡
Chelmsford	8	7½	8½	9	—	7½	6½	5	5	6½
Cheltenham	9½	9½	9½	9½	—	9½	9½	6½*	6½*	6½*
Chester	9½	10½	10	9½	9½	10½	9½	6½	7	7
Chesterfield	9	9½	9	8	9	8½	8½	5½	5½	5½
Colchester	8	8½	8½	9	8	9	6	5½	5½	5½
Coventry	10½	11	11	10½	11	11	10	8½	8½	9
Crewe	7½	8	7½	9	8½	8½	8	5½	5½	6
Darlington	9½	10	10	10½	10	9½	9	7	7	7
Derby	9½	10	9½	9	9	9½	8	7	7	7½
Doncaster	9½	9½	9½	9½	9½	9	8	6½	6½	7½
Dudley	8½	10	10	8½	8½	8	7½	6½	6½	6½
Durham	9½	9½	9½	9½	10	9	8½	6½	6½	7
East Glam. and Mon. Valleys	10	10	10	10	—	—	9	7	7	7
Exeter	8	8½	8½	8½	7½	7½	7½	5½	5½	5½
Folkestone	8½	9	9	9½	8½	9	8	7	7	7
Gloucester	8	9	9	8	8	9	8	7	7	7
Grantham	8	8	7½	7½–8	7½–8	7	6½	5	5	5
Grays	—	10	10	—	—	9½	8½	7	7	7
Grimsby	9	9	9½	9½	9	9	8½	7	7	8
Great Yarmouth	8	8	8	—	8	8	6½	5	5	—
Halifax	10	10	9½	9	9	9	9½	7	7	7
Harrogate	9½	9½	9½	9	8	10	8½	6½	6½	6½
Hartlepools	10	10½	10½	10½	11	10½	9	7½	7½	8
Hastings	8½	8	8	8½	8	8	7	6½	5½	6½
Hereford	8	8	7½	8½	8	7	7	5½	5½	5½
Huddersfield	11	11	10½	9½	10	9	8½	7½	7½	7½
Hull	10½	10½	10½	10½	10½	10	9	8½	8½	8½
Ipswich	8½	8½	8½	9	9	8½	7	5½	5½	5½
Lancaster	10½	10	10	10	9	10	9	6	6½	7½
Leamington Spa	9	9	9	8½	9	9	8	6½	6½	6½
Leeds	10½	10½	10½	10½	10½	11	9	8	8	8½
Leicester	10½	10½	10½	10½	11	10½	9	8	8	8½
Lincoln	9	9½	9½	9	8½	8½	8	6	5½	6½
Liverpool	1/-	1/-	1/-	11	11½	1/-	10½	8	8	8
Llanelly	9½	9½	9½	8½	9	8½	8	5½	5½	5½
London	1/0½	1/0½	1/0½	1/0½	—	1/1	10	9	9	9
Loughborough	9	8½	9	9	9	8½	8½	5½	5½	6½
Luton	9½	9	9	8½	9	8½	7½	6½	6½	6½
Maidstone	9	9	9	9	9	9	8	6	6	6
Manchester	11	11	11	11	10	11	10½	7½	7½	7½
Mansfield	8½	10	9½	8½	—	9½	9	7	7	7
Merthyr Tydfil	9½	9½	9½	9½	9½	9	8½	6½	6½	6½
Middlesbrough	10	10½	10½	10½	11	10½	9	7½	7½	8
Newcastle-on-Tyne	11	11	11	11	11	10½	10	7½	7½	7½
Newport, Mon.	10	10	10	10	8½	10	9½	7	7	7
Northampton	9	9	9	9	8½	9	8	6	6	6
Norwich	8½	8½	8½	8½	8	8½	7½	6	6	6
Nottingham	11	11	11	10½	10½	11	10	8½	8½	9
Oldham	11	11	11	10	10	10†	9½	7½	7½	7½
Oxford	9½	9	9	9	8	9	8	6½	6½	6½
Plymouth	9*	9*	9*	9*	9	9*	8½	6½*	6½*	6½*
Pontypridd	9½	9½	9½	9½	9½	9½	8½	6½	6½	7‡
Portsmouth	9½‡	9½‡	9½‡	9½‡	9½‡	8½‡	7½‡	7‡	7‡	7‡
Preston	10½	10½	10	9½	9½	10	9½	8½	6½*	6½*	6½*
Reading	9	9½	9½	10½	—	9½	8½	7½	7½	7½
Rochdale	10½	10½	10½	10	9½	10	9½	7½	6	6
Rochester	8	9	9	9	9	8½	7½	6	7	8
Rugby	10	10	10	10½	8½	10	9	7	7	7
St. Albans	9	9	9	9–10	9	9–10	8	7	6½	6
St. Helens	9	9½†	10†	9½	9½	9½	10½	6	7	7
Scarborough	9	9½	9	8½	8	9	8	7	7½	7½
Sheffield	10½	10†	10½†	9½	10	10½	9	7½	6½	6½
Shrewsbury	8½	9½	9½	9½	—	8½	7	6½	7½	7½
Southampton	10½	10½	10½	10½	10½	10½	9½	7½	6	6
Southend-on-Sea	9	9	9	9	P'cework	9	7	6	7	7½
Southport	11	10	10½	10	10	10‡	10	7	7½	7½
South Shields	11	11	11	11	11	10½	10	7½	7½	7½
Stockport	11	10½	10½	10½	10½	10	9½	7	7½	8
Stockton-on-Tees	10	10½	10½	10½	11	10½	9	7½	7½	—
Stoke-on-Trent	9	9½	9	9	—	8½	8½	6	6	6
Stroud	8	8	8	8	7½	7½	7½	6	6	7½
Sunderland	11	11	10½	11	11	9½	9½	7½	7½	7½
Swansea	10½	10½	10½	10½	10½	9	10	7½	7½	7½
Taunton	7	7	7	7	—	6	6½	4½	4½	4½
Torquay	8	8	8	8	8	8	8	6	6	6
Wakefield	9½	10	9	9½	8½	9	9	7½	7½	7½
Walsall	10½	10	10	10	9½	10	8½	7½	7½	7½
Warrington	8½	10½	10½	10½	8½	10½	9½	6½	6½	6½
West Bromwich	11	11	10	10½	—	10	8	8	8	8
Wigan	10½	11	10	10	9½	10½	9½	7	7	7
Windsor	9	9	9	10	—	9	—	6	6	6
Wolverhampton	10½	10½	10½	11	8	10	9	7½	7½	7½
Worcester	8½	9½	9½	9½	9	9½	8	6½	6½	6½
York	9½	9½	9½	9½	10	9½	8½	7	7	7

The Mason's rate given is for bankers; fixers usually ½d. per hour extra.

*War bonus of 2s. per week granted. † War bonus of 3s. per week granted. ‡ War bonus of 2s. 6d. per week granted.

BOOKS.

The Greek House, its History and Development from the Neolithic Period to the Hellenistic Age. By BERTHA CARR RIDER. (Cambridge, 1916. 10s. 6d. net.)

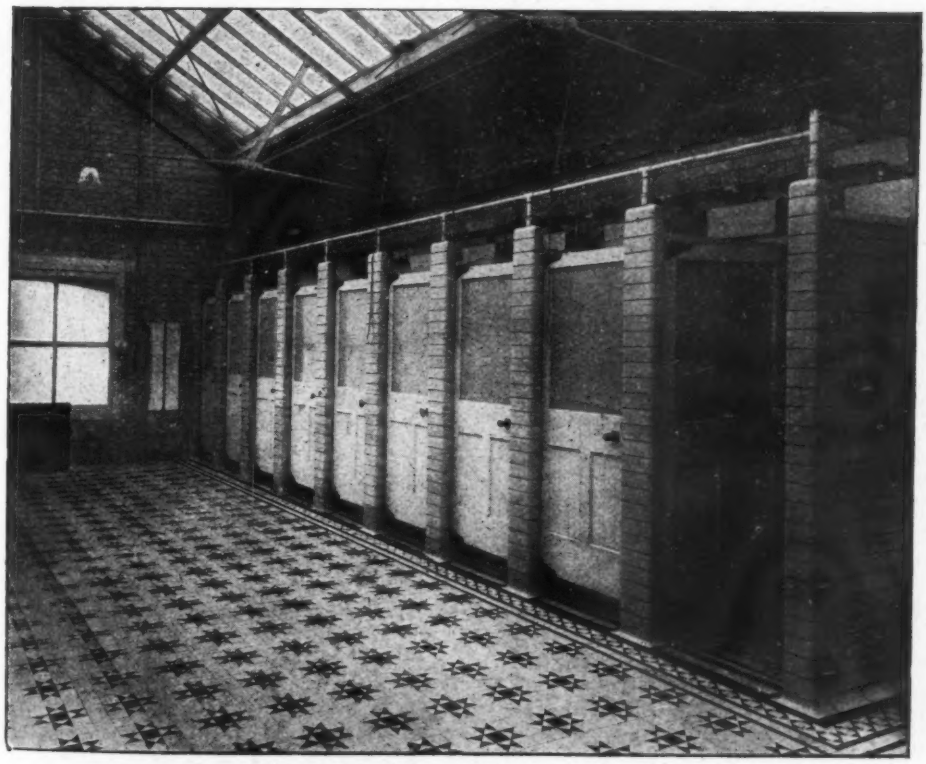
In this interesting work Miss Rider traces the history of the Greek house from the Stone Age to that of Vitruvius in the light of recent excavation. It is startling to realise that hardly any of the material here lavishly illustrated was known forty years ago, that most of it was unknown even twenty years since, and as no general survey of this mass of new matter exists in any language the book fills a need.

The author regards the tomb as probably the oldest form in which the primitive dwelling is known to us, certainly as the basis on which many of our conclusions must rest; the circular form is presumably the more primitive, but the rectangular prevails, especially for houses, where the available material is wood. The latter type, consisting of a large common room with central hearth and smaller chambers grouped round it, persists in Schleswig and elsewhere to the present day (page 31), and is remarkably like the Homeric house as restored by Professor Myres and others in the light of modern knowledge, save for the difference due to climatic conditions, that in the northern type the hearth is the centre, in the southern type the courtyard or *megaron*.

In Crete the rectangular type gradually supersedes the circular even for sepulchral use; at Orchomenos we can trace the complete development "from the round through the elliptical to the square and rectangular" (page 45); an urn from Melos shows another variant of the transition stage—a group of circular huts round a square courtyard; while at Megasa, in Crete, we find a rock dwelling enlarged by the addition of a rectangular house contemporary with itself, as the remains in both prove. One natural reason for the disappearance of the circular hut is that it is extremely hard to divide into rooms; the type therefore early disappears from use, but survives in historic times for ritual purposes in tombs and temples. It is odd that Miss Rider omits any mention of the great chamber tombs of Asia Minor, of which the Mausoleum, with its central hall and recessed shrines, is the type, as also the revival of the primitive circular tomb in a form combining tomb and temple in the magnificent series of imperial *mausolea* from Augustus to Constantine, now beginning to be appreciated.

The normal form of the primitive rectangular house then consists, as at Schleswig to-day and in the Greek world of the second century A.D., as we learn from Galen, of "a square court facing south, with stalls around it for the animals and a living room or rooms at the north end," though the description does not apply to the 800 odd houses of fifth-century Athens known from recent excavation, which consist in the main of one- and two-roomed tenements. These huts of Periclean Athens, for they were little better, contrast curiously not only with the palaces of Crete, with their endless complexities of passages and store-rooms, their splendid throne-rooms and bathrooms facing south and furnished with gesso benches for the luxury of sitting in the sun after or between bathes, but with the normal Minoan house as it is presented to us on the enamelled plaques recently found by Sir Arthur Evans, with their two- and three-storied elevations, with or without an attic, their commonplace square windows, divided or not into smaller panes, and placed on either side of a plain front door, innocent of porch or decorative heading. Where the palace lighting and water supply were so excellent it is fair to conclude that the small house, known to us only in these pictures, was not deficient; the system of light wells, so far in advance of later Greek lighting, the main drainage, the separate supply of drinking water brought in terracotta pipes made in sections with cemented joints and stop ridges—these things were before 1900 even more unexpected than the artistic splendours of the island empire of Minos in an age when unwalled cities, safe behind the overwhelming power of a great navy and blessed with a milder climate than at present, as the author acutely infers from the lightness of Minoan dress, traded with the ends of the earth, and grew rich in things artistic as well as material, while the inland cities, Troy, Tiryus, and Mycenæ, were cramped in small spaces behind defensive walls 46 ft. thick.

It would be out of place to consider in detail the author's excellent chapters on the Homeric and the Athenian house; it is enough to say that no scholar can henceforth attempt to bolster up the old view of the separate women's *megaron* in either the one or the other, since all the relevant passages in Greek literature are called into review, and from the point of view of the suppositious court weighed and found wanting. We have no space to deal with Delos and Priene, which show us the later Greek city as Pompeii shows us the Italian; we can only recommend the book to the attention of every student, concluding with certain cavils. A table of explanatory terms is badly wanted. Finally, Socialism appears to be the author's weak point. To suggest that Odysseus' work on his own house may be "the aftermath of those healthy socialistic ideas which we found prevailing in Crete" (and which other archæologists have altogether failed to find) is frankly absurd. Odysseus worked because he was the poor king of four tiny islands, and his own father tilled the soil; Agamemnon and Menelaus, rich kings of important cities, govern in great palaces, and are not less but more respected than Odysseus, while Alcinous, the ideal ruler of the ideal country, rules in lofty state in a palace filled with works of art, the companion not of workmen, but of his fellow kings (Od. VI. 54).



NOTE THE ENTIRE ABSENCE OF WOOD, WITH THE EXCEPTION OF THE DOORS.

London Offices and Showrooms—

2 & 3, NORFOLK STREET, STRAND, W.C.

FOR DIVISIONS in

Workmen's Conveniences,
In Munition Works,
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THE BEST MATERIAL IS THE

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Glazed Partition Bricks

(2½ IN. ON BED).

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The Leeds Fireclay Co. LTD.,

WORTLEY, LEEDS.

List of Competitions, Contracts, etc.

For some contracts still open, but not included in this List, see previous issues. **Those with an asterisk (*) are advertised in this number:** Competitions, iv.; Contracts, iv.; Public Appointments, xvii.; Auction Sales, xviii. Certain conditions beyond those given in the following information are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

*** It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur.

Competition.

* NO DATE.—COVERED SEAT.—The Ilford Chamber of Commerce invite drawings for a covered seat as a memorial. Particulars from Secretary, Cranbrook Chase, Ilford.

Contracts.

BUILDING AND PAINTING.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

SEPTEMBER 16.—**Londonderry.**—FLOORING.—For the repair of the flooring of Toome Bridge. Drawing, etc., at the office of the County Surveyor of Londonderry, Londonderry, or of the County Surveyor of Antrim, at the County Courthouse, Belfast.

SEPTEMBER 18.—**Swaffham.**—REPAIRS.—For builders' repairs required to be done at the workhouse during the ensuing half-year for the B.G. Forms of tender, etc., from Mr. Sidney Matthews, Clerk to Guardians, Swaffham.

SEPTEMBER 18.—**Wakefield.**—REPAIRS.—The West Riding Highways Committee invite tenders for the repair in masonry and concrete of handsworth Woodhouse Bridge, over the River Rother. Plans, etc., of Mr. F. G. Carpenter, West Riding Surveyor, County Hall, Wakefield. Deposit, £1.

SEPTEMBER 19.—**Cuckfield.**—WORKS AND MATERIALS.—The Guardians of the Cuckfield Union invite tenders for bricklayers', plasterers', and joiners' works and materials. Tender forms from Mr. C. H. Waugh, Acting Clerk, Haywards Heath.

SEPTEMBER 25.—**Dundalk.**—PAINTING.—The Directors of the Great Northern Railway Company (Ireland) invite tenders for the painting of ten dwelling-houses at Dundalk. Specification in the Engineers' Offices at Dublin and Belfast, and copies of same, together with forms of tender, may be obtained from Mr. T. Morrison, Secretary, Secretary's Office, Amiens-street Terminus, Dublin. Deposit, £1 1s.

OCTOBER 7.—**Baltinglass.**—CATCHPIT, ETC.—The R.D.C. of Baltinglass No. 1 invites tenders for the undermentioned works:—Building a catchpit at Hutton's, west side of Baltinglass Bridge; repairing labourers' cottages at Tober, Manger, Stratford, Cornaan, Rathdaugan, and Mullinacranna. Forms of contract of Mr. J. Ralph Dagg, Clerk to the Council, Baltinglass Workhouse. Deposit, £1.

* NO DATE.—**Coalville.**—ALTERATIONS TO PREMISES, ETC.—The Coalville Working Men's Co-operative Society, Ltd., invite tenders for decorating, painting, and small alterations to business premises.

FURNITURE, MATERIALS, etc.

SEPTEMBER 15.—**Newcastle-on-Tyne.**—MATERIALS.—Supply to the B.G. of building materials, etc. Form of tender of Mr. Gladstone Walker, Clerk to the Guardians, 127, Pilgrim-street, Newcastle-upon-Tyne.

SEPTEMBER 18.—**Gateshead.**—PAINTS, ETC.—Supply to the Guardians of paints, oils, etc. Forms of tender of Mr. George Craighill, Union Clerk, Poor Law Union Offices, Prince Consort-road, Gateshead.

SEPTEMBER 18.—**Leeds.**—PAINTS, ETC.—Supply to the Guardians of paints and oils for six months. Forms of tender of Mr. James H. Ford, Clerk to the Guardians, Poor Law Offices, South-parade, Leeds.

SEPTEMBER 18.—**London.**—OIL.—Supply to the Commissioners of His Majesty's Works and Public Buildings of 270,000 gallons heavy fuel oil for oil-fired locomotives, delivered over a period of six months. Forms of tender, etc., of the Controller of Supplies, H.M. Office of Works, King Charles-street, Westminster, S.W.

SEPTEMBER 18.—**Stockport.**—PAINTS.—Supply to the B.G. of paint, etc. Tender forms from Mr. C. F. Johnson, Clerk to the Guardians, Union Offices, Shaw Heath, Stockport.

SEPTEMBER 18.—**Wrexham.**—MATERIALS.—Supply to the Guardians during the three months commencing October 1, 1916, of painters' and glaziers' materials, etc. Forms of tender of Mr. T. J. Thomas, Master, Workhouse, Wrexham, and Mr. E. S. Knight, Superintendent of Scattered Homes, 23, Chester-street, Wrexham.

SEPTEMBER 19.—**Brighton.**—MATERIALS.—Supply to the B.G. of painters' and plumbers' materials. Forms of tender at the Guardians' Clerk's Office, Princes-street.

SEPTEMBER 19.—**London.**—PAINT, ETC.—Supply to the Guardians of Whitechapel Union of paint, etc., for six months. Forms of tender, etc., of Mr. F. J. Tootell, Clerk, Union Offices, 74, Vallance-road, E.

SEPTEMBER 20.—**London.**—MATERIALS.—Supply to the Guardians of St. Pancras parish of building materials, etc. Tender forms of Mr. J. E. P. Hall, Clerk, Guardians' Offices, Town Hall, Pancras-road, N.W.

SEPTEMBER 20.—**London.**—MATERIALS.—Supply to the Kensington B.G. of builders' materials, etc. Form of tender, etc., of Mr. W. R. Stephens, Clerk to the Board, Guardians' Offices, Marloes-road, Kensington, W.

SEPTEMBER 20.—**Stannington.**—PAINTS, ETC.—Supply to the Gateshead County Borough Asylum, Stannington, Newcastle-on-Tyne, of paints, glass, etc. Forms of tender from the Clerk of the Asylum.

SEPTEMBER 21.—**Whitchurch.**—MATERIALS.—Supply to the Welsh Metropolitan War Hospital, Whitchurch, near Cardiff, of builders' materials for six months. Forms of tender of Mr. T. D. Morgan, Clerk and Steward, War Hospital, Whitchurch, near Cardiff.

SEPTEMBER 23.—**Hyde.**—ENGINE SLACK, ETC.—Supply to the Stores Committee of engine slack, pitch and oil, cement, and iron castings. Forms of tender of the Borough Surveyor, Town Hall, Hyde.

SEPTEMBER 25.—**Croydon.**—MATERIALS.—Supply to the Guardians of builders' materials, etc. Tender forms of Mr. Henry List, Clerk to the Guardians, Union Offices, Mayday-road, Thornton Heath, Surrey.

ENGINEERING, IRON, AND STEEL.

SEPTEMBER 20.—**London.**—RADIATORS.—Supply to the Commissioners of His Majesty's Works and Public Buildings of radiators, during a period of six months from October 1, 1916. Forms of tender, etc., of the Controller of Supplies, H.M. Office of Works, etc., King Charles-street, Westminster, S.W.

SEPTEMBER 25.—**Dublin.**—SWITCHES, ETC.—Supply to the directors of the Great Northern Railway Company (Ireland) of switches and built crossings and chairs for same. Drawings, etc., from Mr. T. Morrison, Secretary, Secretary's Office, Amiens-street Terminus, Dublin. Deposit, £2 2s.

ROAD, SANITARY, AND WATER WORKS.

SEPTEMBER 16.—**Bakewell.**—SEWERAGE SCHEME.—For the construction of a small sewerage scheme for the R.D.C. The work comprises about 110 yds. of 9-in. sewer, with manholes, tanks, and filter bed. Drawings, etc., of Messrs. Brady & Partington, Engineers to the Council, Town Hall, Chapel-en-le-Frith. Deposit, £2.

SEPTEMBER 16.—**Briton Ferry.**—GRANITE.—Supply to the U.D.C. of broken granite or basalt road metalling. Tender form, etc., of Mr. H. Alex. Clarke, Engineer and Surveyor, Council Offices, Briton Ferry.

SEPTEMBER 16.—**Harrow-on-the-Hill.**—GRANITE, ETC.—Supply to the U.D.C. of 2-in. broken granite, ¼-in. and ⅜-in. granite chippings, coarse and fine gravel, 1¼-in. or 2-in. tarred granite or slag, ¾-in. tarred granite chippings. Mr. J. Percy Bennetts, Surveyor to the Council, Harrow.

SEPTEMBER 23.—**Tadcaster.**—WATER SUPPLY.—The Guardians invite tenders for the various works (plumbing, hot-water fitting, and drainage) required in the alterations to the water supply, provision of new water-closets, etc., at the Workhouse, Tadcaster. Specification, etc., from Mr. H. C. Wood, Sanitary Inspector and Surveyor, Tadcaster.

SEPTEMBER 26.—**Leatherhead.**—GRANITE.—Supply to the U.D.C. of broken granite, etc. Specifications, etc., of Mr. Sidney R. Drake, Surveyor, Council Offices, Leatherhead.

SEPTEMBER 26.—**South Mimms.**—GRANITE.—Supply to the R.D.C. of granite, gravel, hoggin, tar, etc. Forms of tender from Mr. George Simcox, the Council's Surveyor, at "Bearwood," Great North-road, Potters Bar, Middlesex.

SEPTEMBER 28.—**London.**—GRANITE, ETC.—Supply to the Hendon R.D.C., for six months from October 1, 1916, of broken granite, tarpaving material, tarviated granite, granite chippings, and gravel. Forms of tender of the Surveyor, Mr. J. A. Webb, Great Stanmore.

Public Appointment.

* NO DATE.—FOREMEN AND CLERK OF WORKS.—The R.E. require foremen and clerk of works in the Brighton Command. Salary, £3 3s.

Auction Sale.

* OCTOBER 26.—**Hants.**—Messrs. Knight, Frank, & Rutley will sell by auction building sites facing New Forest.

NEW COMPANIES.

THE undermentioned particulars of new companies recently registered are taken from the Daily Register compiled by Messrs. Jordan & Sons, Ltd., Company Registration Agents, Chancery-lane, W.C.:—

H. LANGTON & SON, LTD. (144,700), Brazil-street, Holderness-road, Hull. Registered August 26. To carry on the business of public and private contractors, pile-drivers, builders, masons, joiners, merchants, and dealers in stone, sand, lime, bricks, etc. Nominal capital, £4,000 in 1,000 £1 Preference shares and 3,000 £1 Ordinary shares.

W. A. BONNELL, LTD. (144,732), 17-18, Railway-approach, London Bridge, S.E. Registered August 30. To carry on business of dealers in ply-wood and timber, railway, shipbuilding, and general contractors, and to grow, cut, work, manufacture, and deal in all articles required for any such business. Nominal capital, £1,000 in 1,000 £1 shares.

[Those with an asterisk (*) are advertised in this issue.]

PRICES CURRENT OF MATERIALS.

[Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry.]

Rain-water pipes and soil pipes, L.C.C. drain pipes, wrought-iron tubes and fittings, and sheet lead have been revised since last issue.—ED.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

Per 1000 Alongside, in River Thames.	£ s. d.
Best Stocks	2 0 0
Picked Stocks for Facings	2 12 0

Per 1000, Delivered at Railway Depôt, London.

	£ s. d.		£ s. d.
Flettons	1 13 0	Best Blue Pressed Staffordshire	5 7 0
Best Fareham Red	3 12 0	Do. Bullnose	5 12 0
Best Red Pressed Ruabon Facing	5 5 0	Best Stourbridge Fire Bricks	6 17 6

GLAZED BRICKS—

Best White, Ivory, and Salt Glazed Stretchers	13 7 6	D'ble Str'tch'rs	18 17 6
		Double Headers	15 17 6
		One Side and two Ends	19 17 6
Headers	12 17 6	Two Sides and one End	20 17 6
Quoins, Bullnose and 4½ in. Flats	16 17 6	Splays and Squints	18 7 6

Second Quality £1 per 1,000 less than best.

	s. d.	
Thames Ballast	8 3	per yard, delivered.
Thames and Pit Sand	9 6	„ „ „
Best Washed Sand	10 0	„ „ „
¾ in. Shingle for Ferro-Concrete	8 6	„ „ „

Per ton, delivered.

	£ s. d.		£ s. d.
Best Portland Cement	2 5 0	..	2 8 0

Do. £2 1s. alongside in 80-ton lots.
Ferrocrete 2s. 6d. per ton extra on above.
Best Ground Blue Lias Lime .. 1 5 6 at rly. depôt.
NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.
Grey Stone Lime ..... 18s. 0d. per yard delivered.
Stourbridge Fireclay in s'cks 35s. 0d. per ton at rly. dpt.

STONE.

	s. d.
BATH STONE—delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube	1 7
Do. do. delivered in railway trucks at Nine Elms, L. & S.W.R., per ft. cube	1 8½
Do. do. delivered on road waggons at Nine Elms Depôt	1 9½
PORTLAND STONE—	
Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Westbourne Park, G.W.R., South Lambeth, G.W.R., or Nine Elms, or L. & S.W.R., per ft. cube	2 5½
Do. do. delivered on road waggons at Pimlico Wharf or Nine Elms Depôt, per ft. cube	2 6½

White basebed, 2d. per ft. cube extra.

RANDOM BLOCKS—Per Ft. Cube, delivered at Rly. Depôt.

	s. d.		s. d.
Ancaster in blocks	2 0	Closeburn Red Freestone	2 2
Beer in blocks	1 7½		
Grinshill in blocks	2 4	Red and White Mansfield random block	2 9
Darley Dale in blocks	2 5	Yellow Magnesian Limestone do. do.	3 3

YORK STONE—*Robin Hood Quality.*

Per Ft. Cube, Delivered at Raiway Depôt.	s. d.
Scappled random blocks	3 4
Per Ft. Super. Delivered at Railway Depôt.	
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2 5
6 in. rubbed two sides, ditto	2 8
3 in. sawn two sides slabs (random sizes)	1 0½
2 in. to 2½ in. sawn one side slabs (random sizes)	0 8½
1½ in. to 2 in. ditto, ditto	0 6½

HARD YORK—

Per Ft. Cube, Delivered at Railway Depôt.	
Scappled random blocks	3 0
Per Ft. Super., Delivered at Railway Depôt.	
6 in. sawn two sides landing to sizes (under 40 ft. super.)	2 3
6 in. rubbed two sides ditto	2 7
3 in. sawn two sides slabs (random sizes)	1 0
2 in. self-faced random flags	0 5

TILES.

	Per 1,000 f.o.r. London. £ s. d.
Best machine-made tiles or hand-made sand-faced tiles from either Broseley or Staffordshire district	2 12 6
Ornamental ditto	2 15 0
Hip and valley tiles (per dozen)	0 5 6

SLATES.

	Per 1,000 of 1,200 f.o.r. London. £ s. d.
Best Blue Bangor Slates, 20 by 10	12 0 0
First quality „ „	11 15 0
„ „ 16 by 8	6 0 0
Best Blue Portmadoc, 20 by 10	11 17 6
First quality „ „	11 7 6
„ „ 16 by 8	6 0 0

WOOD.

BEST BUILDING REDWOOD.

Imported sizes.	Nominal. Per standard. £ s. d.		£ s. d.
Deals: 4 in. by 12 in., 4 in. by 11 in., 3 in. by 11 in., 4 in. by 9 in., and 2 in. by 11 in.	35 0 0	..	36 0 0
9 in. by 9 in., 2½ in. by 9 in., and 2 in. by 9 in.	34 0 0	..	35 0 0

WOOD (*Continued*).

BEST BUILDING REDWOOD.

	Per standard. £ s. d.		£ s. d.
Battens: 2 in., 2½ in., and 3 in. by 8 in.			
2 in., 2½ in., and 3 in. by 7 in.			
2 in., 2½ in., and 3 in. by 6 in.	32 0 0	..	33 0 0
Scantlings: 2 in. by 3 in., 2 in. by 3½ in., 2 in. by 4 in., 2 in. by 4½ in.			
3 in. by 4 in., and 3 in. by 4½ in.			
Boards. 1 in., 1¼ in., and 1½ in. by 6 in. and 7 in.	0 10 0	more than battens.	
¾ in.	1 0 0		
Seconds	1 0 0	less than best	
Best Middling Dantzic and Memel Fir Timber Logs (average specification)	Per load of 50 ft. cube. 10 0 0	..	—
Stocks very limited.	Per load.		
Sawn pitch pine logs (about 35 cu. ft. average)	13 0 0	..	14 0 0
Do. 6 in. to 10 in.	11 0 0	..	12 0 0
	Per standard.		
Best Pitch Pine Deals	35 0 0	..	36 0 0
Under 2 in. thick	0 10 0	extra.	

JOINERS' WOOD.

White Sea First Quality Red: 4 in. by 11 in.	43 0 0	..	44 0 0
3 in. by 11 in., and 2 in. by 11 in.	42 0 0	..	43 0 0
4 in. by 9 in.	38 0 0	..	39 0 0
3 in. by 9 in., and 2½ in. by 9 in.	37 0 0	..	38 0 0
9 in. by 11 in. boards	1 0 0	..	more than deals.
7 in. and 8 in. battens	34 0 0	..	35 0 0
7 in. and 8 in. boards	1 0 0	..	more than battens.
Archangel White Deals—			
Best 3 in. by 9 in. and 10 in. and 11 in.	40 0 0	..	44 0 0
Seconds, do.	2 0 0	less than best.	
U.S. Battens	31 0 0	..	33 0 0
Prepared Floorings and Matchings, Seconds Swedish Red and equal—	Per square actual.		
1¼ in. by 6½ in. planed and shot	2 2 0	..	2 3 0
1¼ in. by 6½ in. planed and matched	2 3 0	..	2 4 0
1 in. by 6½ in. planed and shot	1 10 0	..	1 13 0
1 in. by 6½ in. planed and matched	1 11 0	..	1 12 0
¾ in. by 6½ in. planed, matched, and beaded, or V jointed	1 6 0	..	1 8 0
1 in. by 6½ in. do.	1 10 6	..	1 12 0
Columbian or Oregon Pine, best quality	Per standard. 42 0 0	..	44 0 0
Yellow Pine—First regular sizes	57 0 0	upwards.	
Oddments	39 0 0	„	
Seconds, regular sizes	43 10 0	„	
Oddments	37 10 0	„	
Kauri Pine—Planks per ft. cube	0 8 0	..	—
Wainscot Oak Logs, per ft. cube	0 10 6	..	0 12 6
Dry Wainscot Oak, per ft. super, as inch	0 1 0	..	0 1 3
¾ in. do. do.	0 0 10	..	0 1 0
Dry Mahogany — Honduras, Tabasco, per ft. super, as inch	0 1 0	..	0 1 4
Cuba, Mahogany	0 1 6	..	0 2 6
Dry Walnut, American, per ft. super, as inch	0 1 0	..	0 1 3
French, "Italian," Walnut	0 1 0	..	0 1 6
Teak, per load (Rangoon or Moulmein)	26 0 0	..	30 0 0
Do. do. (Java)	24 0 0	..	26 0 0
American Whitewood planks, per ft. cube	0 8 6	..	0 9 0
Glue, per cwt.	3 15 0	..	3 19 0

METALS.

JOISTS, GIRDERS, &c.

	In London or Railway Vans, £ s. d.		delivered per ton. £ s. d.
Rolled Steel Joists, ordinary sections, basis price	20 0 0	..	21 0 0
Plain Compound Girders, ordinary sections	22 0 0	..	23 0 0
Plain Compound Stanchions	23 0 0	..	24 10 0
Angles, Tees, and Channels, ordinary sections	20 10 0	..	21 10 0
Flitch Plates	20 10 0	..	21 10 0
Cast Iron Columns and Stanchions plain ordinary patterns	13 10 0	..	14 0 0

(Turning extra.)

WROUGHT-IRON TUBES AND FITTINGS—
Discounts off Association Prices.

	Tubes. Per Cent.		Fittings. Per Cent.
Gas at works	47½	....	50
Water „	42½	....	47½
Steam „	37½	....	45
Galvanised gas at works	30	....	42½
„ water „	21½	....	40
„ steam „	15	....	37½

L.C.C. SOIL PIPE—

	London Prices. Pipes Coated. s. d.		Bends. s. d.		Branches. s. d.
2 in.	2 7	....	1 10	....	2 2
2½ in.	3 0	....	2 0	....	2 9
3 in.	3 9½	....	2 2	....	3 4
3½ in.	4 2	....	2 9	....	3 10
4 in.	4 6½	....	3 1	....	4 5

RAIN-WATER PIPES, ETC.—

	London Prices. Pipe. s. d.		Bends. s. d.		Branches. s. d.
2 in.	1 10½	....	1 0	....	1 4
2½ in.	2 1	....	1 2	....	1 8
3 in.	2 4½	....	1 5	....	2 2
3½ in.	2 11½	....	1 9	....	2 7
4 in.	3 2	....	2 1	....	3 1

METALS (*Continued*).

L.C.C. DRAIN PIPES— London Prices
4 in., 4s. 6d. .. 5 in., 5s. 6d. .. 6 in., 6s. 6d.

	Per ton, in London. £ s. d.		£ s. d.
IRON—			
Common Bars	16 0 0	..	—
Staffordshire Crown Bars, good merchant quality	16 0 0	..	17 0 0
Staffordshire "Marked Bars"	17 10 0	..	18 0 0
Mild Steel Bars	18 0 0	..	18 10 0
Steel Bars, Ferro-Concrete quality, £18 basis price.			
Hoop Iron, basis price	20 0 0	..	20 10 0
„ „ Galvanised	33 0 0	..	—
(* And upwards, according to size and gauge.)			
Sheet Iron Black—			
Ordinary sizes to 20 g.	21 0 0	..	21 10 0
„ „ 24 g.	22 0 0	..	22 10 0
„ „ 26 g.	23 0 0	..	23 10 0
Sheet Iron, Galvanised flat, ordinary quality—			
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	31 0 0	..	—
Ordinary sizes to 22 g. and 24 g.	31 0 0	..	31 10 0
Ordinary sizes to 26 g.	34 0 0	..	—
Sheet Iron, Galvanised, flat, best quality—			
Ordinary sizes to 20 g.	34 0 0	..	—
„ „ 22 g. and 24 g.	34 10 0	..	—
Ordinary sizes to 26 g.	37 10 0	..	—
Galvanised Corrugated Sheets—			
Ordinary sizes, 6 ft. to 8 ft. 20 g.	29 0 0	..	—
Ordinary sizes, 22 g. & 24 g.	29 10 0	..	—
Ordinary sizes, 26 g	30 0 0	..	—
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	23 10 0	..	—
Best Soft Steel Sheets, 22 g. and 24 g.	23 15 0	..	—
Best Soft Steel Sheets, 26 g.	25 10 0	..	—
Cut Nails, 3 in. to 6 in.	24 0 0	..	25 0 0

(Under 3 in., usual trade extras.)

LEAD, &c.

Delivered in London.

	£ s. d.		
LEAD—Sheet, English, 4 lb. and up	39 0 0	..	—
Pipe in coils	40 0 0	..	—
Soil pipe	43 0 0	..	—
Compo pipe	43 0 0	..	—
NOTE—Country delivery, 20s. per ton extra; lots under 5 cwt., 1s. 6d. per cwt. extra.			
COPPER—			
Strong Sheet per lb.	0 1 6	..	—
Thin „	0 1 8	..	—
Copper nails „	0 1 6	..	—
Copper wire „	0 1 8	..	—
BRASS—			
Strong Sheet „	0 1 6	..	—
Thin „	0 1 8	..	—
TIN—English Ingots „	0 1 9	..	—
SOLDER—Plumbers' „	0 0 10	..	—
Tinmen's „	0 1 1	..	—
Blowpipe „	0 1 3	..	—

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES AND IN SQUARES IN ORDINARY SIZES.

Per Ft.		Per Ft.
15 oz. fourths	4d.	26 oz. thirds 6½d.
„ thirds	4½d.	32 oz. fourths 6⅞d.
21 oz. fourths	5d.	„ thirds 8d.
„ thirds	5⅞d.	Fluted Sheet, 15 oz. 5½d.
26 oz. fourths	5½d.	„ 21 oz. 6½d.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

	Per Ft.
¼ Rolled plate	4d.
⅜d Rough rolled and rough cast plate	4½d.
½ Rough rolled and rough cast plate	4⅞d.
Figured Rolled, Oxford Rolled, Baltic, Oceanic, Arctic Muffled, and "Stippolyte," white	4⅞d.
Ditto, tinted	6½d.
Rolled Sheet	4½d.

PAINTS, &c.

		£ s. d.
Raw Linseed Oil in pipes per gallon		0 3 2
„ „ „ in barrels „		0 3 3
„ „ „ in drums „		0 3 6
Boiled „ „ in barrels „		0 3 5
„ „ „ in drums „		0 3 9
Turpentine in barrels „		0 3 6
„ in drums „		0 3 9
Genuine Ground English White Lead, per ton (In not less than 5 cwt. casks.)		56 0 0
Red Lead, Dry	per ton	58 0 0
Best Linseed Oil Putty	per cwt.	0 11 0
Stockholm Tar	per barrel	4 5 0
Filocol	per cwt.	0 9 6
GENUINE WHITE LEAD PAINT— "Blackfriars," "Nine Elms," "Park," and other best brands (in 14 lb. tins) not less than 5 cwt. lots per ton delivered		68 0 0

VARNISHES, &c.

	Per gallon. £ s. d.
Fine Pale Oak Varnish	0 8 0
Pale Copal Oak	0 10 6
Superfine Pale Elastic Oak	0 12 6
Fine Extra Hard Church Oak	0 10 0
Superfine Hard-drying Oak, for seats of Churches	0 14 6
Fine Elastic Carriage	0 12 0
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 10 0
Finest Pale Durable Copal	0 18 6
Extra Pale French Oil	1 1 0
Eggshell Flating Varnish	0 18 0
White Pale Enamel	1 4 0
Extra Pale Paper	0 12 0
Best Japan Gold Size	0 10 0
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 0
Berlin Black	0 16 0
Knotting	0 10 0
French and Brush Polish	0 10 0

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 2 *p.m. on Wednesday.*

* Denotes *accepted.* † Denotes *provisionally accepted.*

BANBURY.—For alterations, etc., at the Corporation yard, in connection with the provision of a new fire-station, for the Town Council :—
J. S. Kimberley & Son* £231

DUNDEE.—For the painting of iron railings along line of Elliot-road, for the Dundee Town Council Burial Board :—

Norwell & Co.	£30	0	0
J. McLean	25	0	0
W. R. Macdonald	19	12	0
J. Thomson	19	5	0
R. Laney	18	0	0
G. Raitt, 129, Albert-street, Dundee*	15	19	10

INISHOWEN (Ireland).—For making additions to the Workhouse Infirmary, for the Guardians of Inishowen Union. Mr. W. J. Doherty, M.R.I.A.I., architect, 12, Castle-street, Londonderry :—
J. Kelly, Carndonagh* £415

LARNE.—For carrying out certain repairs at Ballymore Dispensary and residence, for the Guardians. Mr. S. Robinson, surveyor, 37, Curran-steet, Larne :—
A. Duffin, Larne* £19

LONDON.—For repairs to plastering and other works at the Newington Institution, Westmoreland-road, S.E., for the Guardians of Southwark Union. Mr. A. Saxon Snell, F.R.I.B.A., architect, 9, Bentinck-street, Manchester-square, W. :—
Whiter & Co., 89, Newington-butts, S.E.* .. £150

LONDON.—For works in connection with altering and erecting ironing and other laundry plant at Edmonton Workhouse, for the Board of Guardians :—
Colley, Meikle, & Co., 4, Vernon-place, Southampton-row, W.C.* £473

LONDON.—For works in connection with the erection of a baking-oven, and in sundry alterations to kitchens and offices at the Edmonton Military Hospital, for the Board of Guardians :—
Mattock Bros., Wood Green, N.* £760

LONDON.—For erecting new feed-pump at Edmonton House, Bridport-road, Upper Edmonton, N., for the Guardians of Edmonton Union :—
Colley, Meikle, & Co., 4, Vernon-place, Southampton-row, W.C.* £146

NOTTINGHAM.—For minor repairs at the Children's Homes and the Poor Law Offices, for the Board of Guardians :—
Bricklayer : W. Price, 37, Church-drive, Nottingham.‡
Joiner : H. Bowles, 52, Alford-street, Nottingham.‡
Plumbers : G. Simons & Son, 145, Mansford-road, Nottingham.‡

‡ Schedule of prices.

ROTHERFIELD.—For strengthening and repairing Cowfold Bridge, Rotherfield, for the Uckfield Rural District Council :—
D. Wickens, Crowborough* £18

TORPOINT.—For laying new mains for the Torpoint Coal and Gas Co., Ltd. :—
T. Doxey, Weston Beacon, Peverell, Plymouth,* 4s. 2d. per yard run.

PATENTS.

APPLICATIONS PUBLISHED.*

8,429 of 1915.—Melvin Batchlor Church : Coatings for walls and other surfaces.

13,075 of 1915.—Kurakichi Ogawa : Building material.

14,079 of 1915.—John William Howse and Ernest Ridley Debenham : Sockets or like devices for fixing gate irons in their posts.

14,176 of 1915.—Klaes Ludvig Carlsson : Extension ladders.

17,573 of 1915.—Isaac Garside and Fred Eastwood : Gullies.

100,162.—Melvin Batchlor Church : Coating of walls and other surfaces.

100,479.—Louis Nestor Bourdoncle : Traps for gulleys and the like.

100,723.—William Calway : Concrete and like walls cast or moulded in situ.

100,757.—Clifton & Baird, Ltd., and Charles Henry Clifton : Cutting-off or parting machines for cutting off lengths or pieces from bars, billets, tubes, and the like.

100,760.—David Malcolm Ritchie : Haulage clips for colliery hutches, wagons, or like vehicles.

100,799.—P. Corrado : Implement suitable for use as a pick, hoe, spade, and crow-bar.

100,807.—P. J. Flood : Combined bungs and taps.

100,812.—V. J. M. Eras : Locking devices for sash windows or the like.

100,829.—J. Hampson : Portable door fasteners.

* These applications are now in the stage in which opposition to the grant of Patents upon them may be made.

TO CORRESPONDENTS.

NOTE.—All communications with respect to literary and artistic matters should be addressed to "THE EDITOR" (and not to any person by name); those relating to advertisements and other exclusively business matters should be addressed to THE BUILDER LTD., and *not* to the Editor.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications; and the Editor cannot be responsible for drawings, photographs, manuscripts, or other documents, or for models or samples sent to or left at this office, unless he has specially asked for them.

All drawings sent to or left at this office for consideration should bear the owner's name and address on either the face or back of the drawing. Delay and inconvenience may result from inattention to this.

Any commission to a contributor to write an article, or to execute or lend a drawing for publication, is given subject to the approval of the article or drawing, when received, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

N.B.—Illustrations of the First Premiated Design in any important architectural competition will always be accepted for publication by the Editor, whether they have been formally asked for or not.

TERMS OF SUBSCRIPTION.

"THE BUILDER" (Published Weekly) is supplied DIRECT from the Office to residents in any part of the United Kingdom at the prepaid rate of 19s. per annum, with delivery *by Friday Morning's Post* in London and its suburbs.

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